

TO The New World—

for Liquid Chromatography

# Develosil™ XG-C18

for Liquid Chromatography

NOMURA CHEMICAL CO., LTD.

HP  
L  
C  
Develosil™  
column

TO The New World

for Liquid Chromatography

# Develosil™ XG-C18

It is new series release from Develosil™. An original new technique is included in this column. Develosil™ XG-C18 supports the wide field including medicine and agriculture and the food.

## 1 Specifications

Develosil™ XG-C18

### ● Silica base

This product uses a Silicagel with a few impurities.

### ● Usability

As for this column, equilibrium is early and the pressure is low, too.

### ● Stability

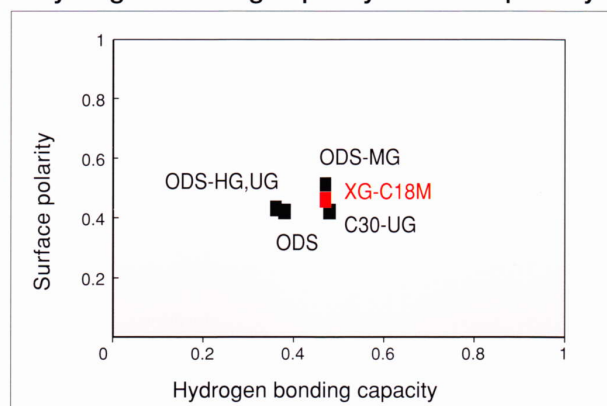
The Develosil™ series produces it from a Silicagel to a column in the company. We carry out severe quality control in all processes.

Surface area	300m <sup>2</sup> /g
Pore diameter	14nm
Pore volume	1.10mL/g
Ligand	Octadecyl (Mono)
Carbon content	19%
Endcapping	○
pH range	pH1.5-8

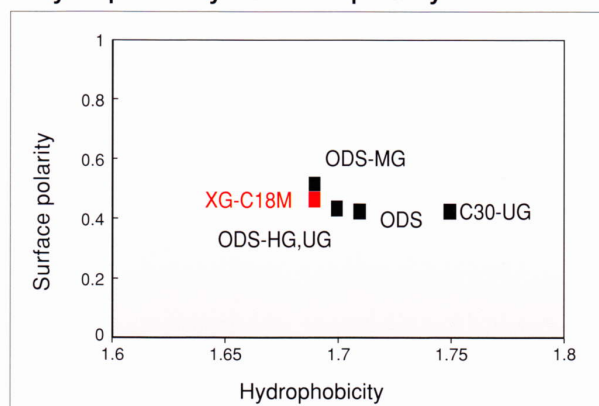
## 2 Product inspection of Develosil™ XG-C18

Develosil™ XG-C18

### 1. Hydrogen bonding capacity - Surface polarity

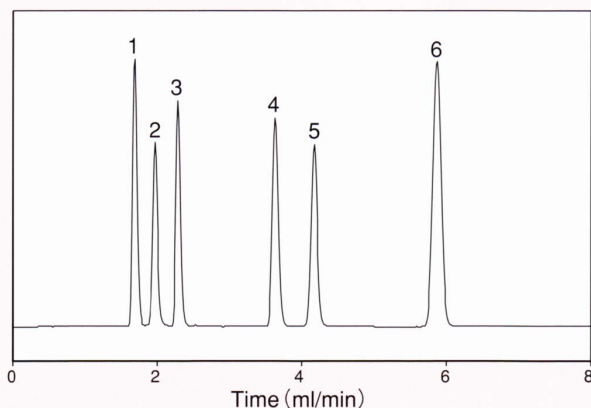


### 2. Hydrophobicity - Surface polarity



The parameter mentioned above was calculated than the following selectivity.

- Hydrogen bonding capacity  $\alpha$  (Caffeine/Phenol)
- Hydrophobicity  $\alpha$  (Toluene/Benzene)
- Surface polarity (Methyl Benzoate/Toluene)



Conditions:

Column : DevelosilXG-C18M (5 $\mu$ m)

Size : 4.6x150mm

Mobile Phase : Methanol/Water=70/30

Flow rate : 1.0ml/min

Temperature : 40°C

Detection : UV254nm

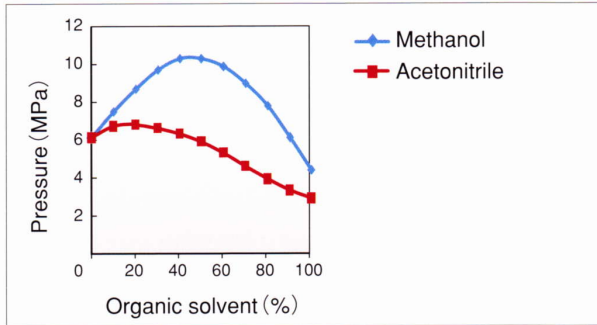
Sample : 1.Uracil (t<sup>o</sup>) 2.Caffeine 3.Phenol

4.Methyl Benzoate 5.Benzene

6.Toluene

### 3 Column pressure of Develosil™ XG-C18

Develosil™ XG-C18



Conditions:  
 Column : DevelosilXG-C18M (5um)  
 Size : 4.6x150mm  
 Mobile Phase : Methanol/Water  
 Acetonitrile/Water  
 Flow rate : 1.0ml/min

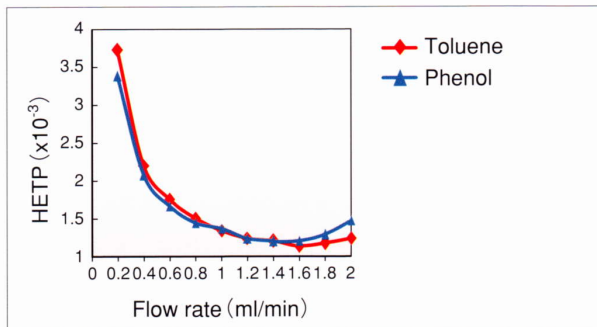
Develosil™ XG series shows low pressure.  
 Follows are enabled.

- Flow rate up
- High composition of the pressure is usable

※These data are pressure displayed by a system.

### 4 van Deemter plot of Develosil™ XG-C18

Develosil™ XG-C18

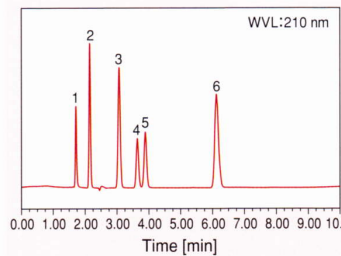


Conditions:  
 Column : DevelosilXG-C18M (5um)  
 Size : 4.6x150mm  
 Mobile Phase : (Toluene) Acetonitrile/Water=50/50  
 (Phenol) Acetonitrile/Water=10/90  
 Temperature : 40°C  
 Detection : UV254nm  
 Sample : Toluene (0.01mL/mL)  
 Phenol (0.05mg/mL)  
 Injection volume : 1.0uL

### 5 Analysis example

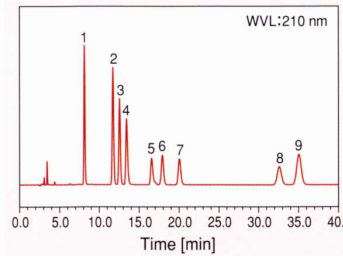
Develosil™ XG-C18

#### 1. Analysis of organic acid



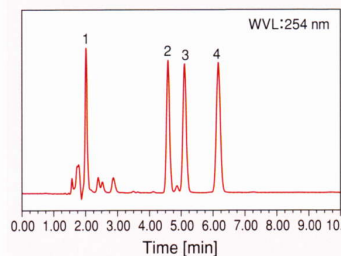
Conditions :  
 Column : Develosil XG-C18M (5um)  
 Size : 4.6x150mm  
 Mobile Phase : Acetonitrile/0.2%  
 Phosphoric acid=2/98  
 Flow rate : 1.0ml/min  
 Temperature : 40°C  
 Detection : UV210nm  
 Sample : 1.Oxalic acid  
 2.L-Ascorbic acid/3.Citric acid  
 4.Succinic acid/5.DL-Malic acid  
 6.Propionic acid

#### 2. Analysis of pesticide



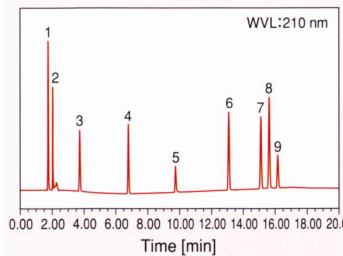
Conditions :  
 Column : Develosil XG-C18M (5um)  
 Size : 4.6x250mm  
 Mobile Phase : Acetonitrile/  
 0.1%Phosphoric acid=40/60  
 Flow rate : 1.0ml/min  
 Temperature : 40°C  
 Detection : UV210nm  
 Sample : 1.Thiophanate-methyl  
 2.Bentazone/3.Thiuram/4.2,4-PA  
 5.Triclopyr/6.Flazasulfuron/7.MCPP  
 8.Halosulfuron-methyl/9.Dymron

#### 3. Analysis of steroid



Conditions :  
 Column : Develosil XG-C18M (5um)  
 Size : 4.6x150mm  
 Mobile Phase : Acetonitrile/Water=50/50  
 Flow rate : 1.0ml/min  
 Temperature : 40°C  
 Detection : UV254nm  
 Sample : 1.Estrinol/2.β-Estradiol  
 3.17α-Estradiol/4.Estron

#### 4. Analysis of pharmaceutical products



Conditions :  
 Column : Develosil XG-C18M (5um)  
 Size : 4.6x150mm  
 Mobile Phase : A) Acetonitrile+0.2%Phosphoric acid  
 B) 0.2%Phosphoric acid  
 Gradient : A) 10%-70% (15min)→70% (25min)  
 Flow rate : 1.0ml/min  
 Temperature : 40°C  
 Detection : UV210nm  
 Sample : 1.Pyridoxine HCl  
 2.I-Phenylephrine HCl/3.Acetaminophen  
 4.Guaifenesin/5.Diphenhydramine HCl  
 6.Ketoprofen/7.Flurbiprofen  
 8.Indomethacin/9.Ibuprofen

I.D. 2.0mm, 3.0mm, 4.0mm same price

## Conventional columns

### Conventional columns

Packing name	Column size	Particle size	P/N
XG-C18M	I.D. 4.6x35mm	3	XG18M346035W
	I.D. 4.6x50mm		XG18M346050W
	I.D. 4.6x75mm		XG18M346075W
	I.D. 4.6x100mm		XG18M346100W
	I.D. 4.6x150mm		XG18M346150W
	I.D. 4.6x250mm	XG18M346250W	
	I.D. 4.6x35mm	5	XG18M546035W
	I.D. 4.6x50mm		XG18M546050W
	I.D. 4.6x75mm		XG18M546075W
	I.D. 4.6x100mm		XG18M546100W
I.D. 4.6x150mm	XG18M546150W		
I.D. 4.6x250mm	XG18M546250W		

### Guard column for conventional

Product name	P/N
Guard cartridge (4pieces) 4.0x10mm	XG18540010C
Holder	HO00040010C
Guard cartridge set**	XG18540010W

\*\*Guard cartridge set = Holder (1piece) + cartridge 4.0x10mm (1piece)

## Semi-micro columns

### Semi-micro columns

Packing name	Column size	Particle size	P/N
XG-C18M	I.D. 4.6x35mm	3	XG18M320035W
	I.D. 4.6x50mm		XG18M320050W
	I.D. 4.6x75mm		XG18M320075W
	I.D. 4.6x100mm		XG18M320100W
	I.D. 4.6x150mm		XG18M320150W
	I.D. 4.6x250mm	XG18M320250W	
	I.D. 4.6x35mm	5	XG18M520035W
	I.D. 4.6x50mm		XG18M520050W
	I.D. 4.6x75mm		XG18M520075W
	I.D. 4.6x100mm		XG18M520100W
I.D. 4.6x150mm	XG18M520150W		
I.D. 4.6x250mm	XG18M520250W		

### Guard column for Semi-micro

Product name	P/N
Guard cartridge (4pieces) 1.5x10mm	XG18515010C
Holder	HO00015010C
Guard cartridge set**	XG18515010W

\*\*Guard cartridge set = Holder (1piece) + cartridge 1.5x10mm (1piece)

## Prep column

### Prep column

Packing name	Column size	Particle size	P/N
XG-C18M	I.D. 10x150mm	5	XG18M5P1150W
	I.D. 10x250mm		XG18M5P1250W
	I.D. 20x150mm		XG18M5P2150W
	I.D. 20x250mm		XG18M5P2250W

### Prep guard column

Packing name	Column size	Particle size	P/N
XG-C18M	I.D. 8.0x10mm	5	XG18M580010W
	(for I.D. 10mm)		
	I.D. 20x50mm		XG18M5P2050W

# Develosil XG-C18

It is new series release from Develosil. An original new technique is included in this column. Develosil XG-C18 supports the wide field including medicine and agriculture and the food.

## 1. Specifications

### Silica base

This product uses a Silicagel with a few impurities.

### Usability

As for this column, equilibrium is early and the pressure is low, too.

### Stability

The Develosil series produces it from a Silicagel to a column in the company.

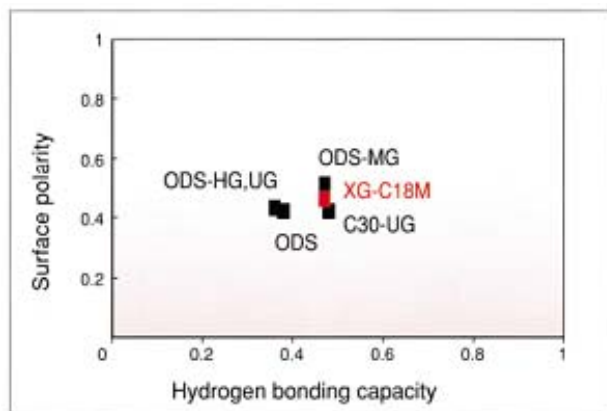
We carry out severe quality control in all processes.

### Characteristic of Develosil XG-C18

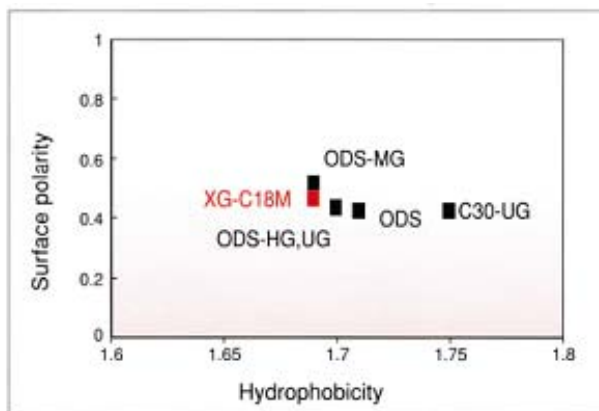
Surface area	300m <sup>2</sup> /g
Pore diameter	14nm
Pore volume	1.10mL/g
Ligand	Octadecyl (Mono)
Carbon content	19%
Endcapping	○
pH range	pH1.5-8

## 2. Product inspection of Develosil XG-C18

### 1. Hydrogen bonding capacity – Surface polarity

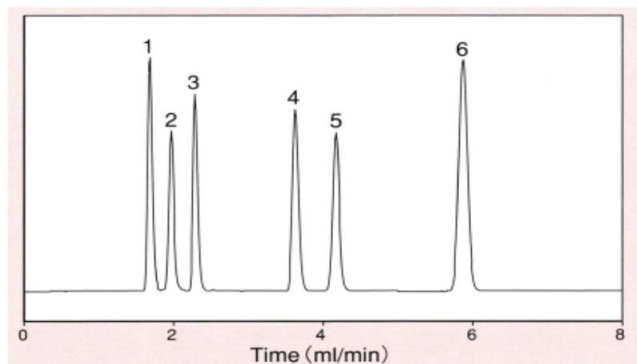


### 2. Hydrophobicity – Surface polarity



The parameter mentioned above was calculated that the following selectivity.

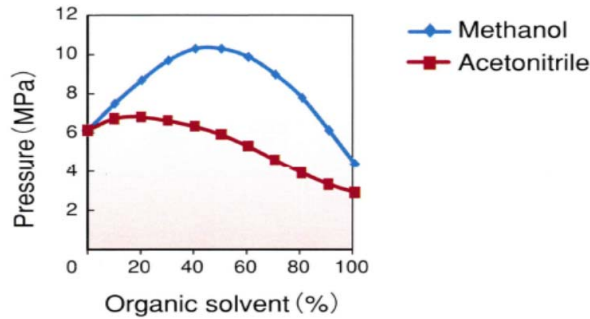
- Hydrogen bonding capacity  $\alpha$  (Caffeine / Phenol)
- Hydrophobicity  $\alpha$  (Toluene / Benzene)
- Surface polarity (Methyl Benzoate / Toluene)



### Conditions

Column	Develosil XG-C18M (5 $\mu$ m)
Size	4.6x150mm
Mobile Phase	Methanol / Water = 70 / 30
Flow rate	1.0 ml / min
Temperature	40°C
Detection	UV254nm
Sample	1. Uracil ( $t^0$ )    2. Caffeine 3. Phenol        4. Methyl Benzoate 5. Benzene      6. Toluene

### 3. Column pressure of Develosil XG-C18



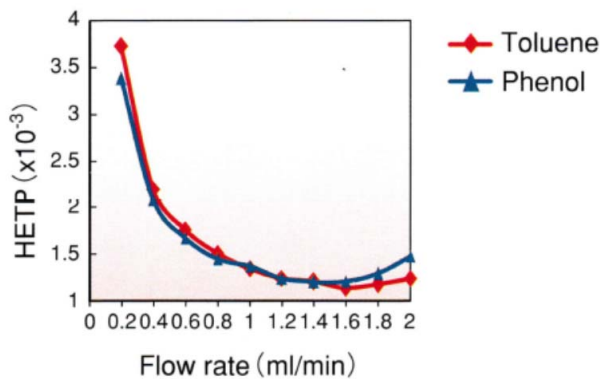
Conditions	
Column	Develosil XG-C18M (5um)
Size	4.6x150mm
Mobile Phase	Methanol / Water
	Acetonitrile / Water
Flow rate	1.0 ml / min

Develosil XG series shows low pressure.  
Follows are enabled

- Flow rate up
- High composition of the pressure is usable

※These data are pressure displayed by as system.

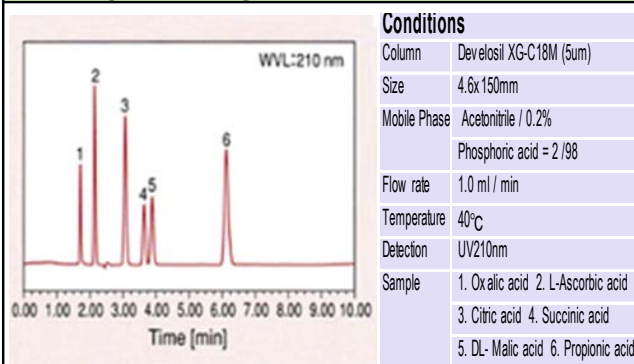
### 4. van Deemter plot of Develosil XG-C18



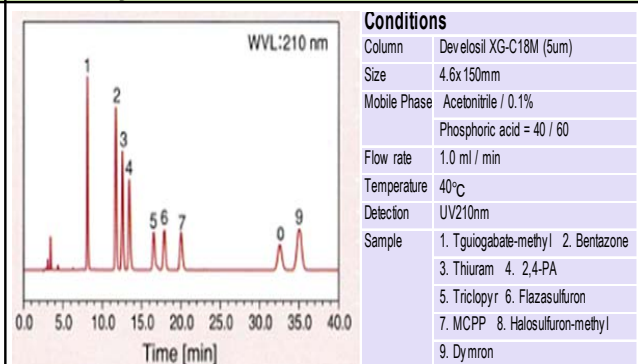
Conditions	
Column	Develosil XG-C18M (5um)
Size	4.6x150mm
Mobile Phase	(Toluene) Acetonitrile / Water = 50 / 50
	(Phenol) Acetonitrile / Water = 10 / 90
Temperature	40°C
Detection	UV25nm
Sample	Toluene (0.01 mL / mL)
	Phenol (0.05 mg / mL)
Injection volume	1.0 uL

### 5. Analysis example

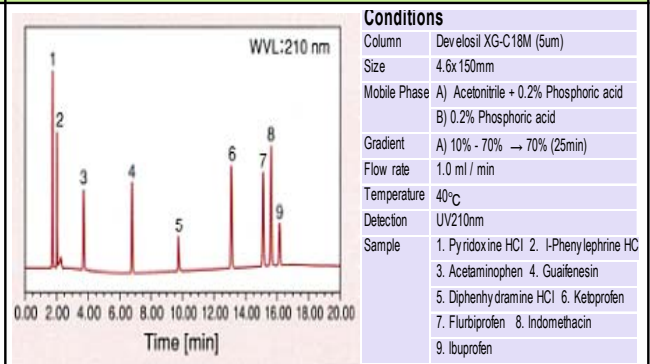
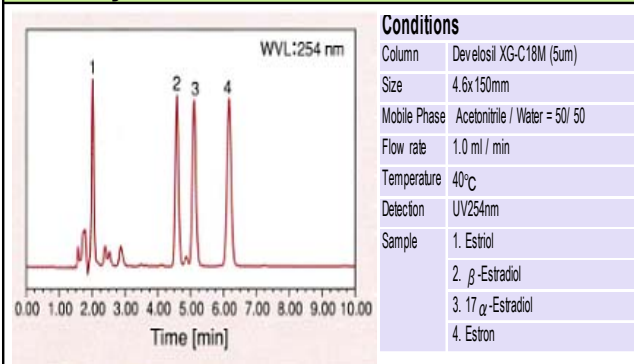
#### 1. Analysis of Organic acid



#### 2. Analysis of pesticide



#### 3. Analysis of steroid



## 6. Price List

I.D. 2.0mm, 3.0mm, 4.0mm same price

### Conventional columns

Packing name	Column size (I.D. x Length)	Particle size	P/N
XG-C18M	4.6x35mm	3	XG18M346035W
	4.6x50mm		XG18M346050W
	4.6x75mm		XG18M346075W
	4.6x100mm		XG18M346100W
	4.6x150mm		XG18M346150W
	4.6x250mm		XG18M346250W
	4.6x35mm	5	XG18M546035W
	4.6x50mm		XG18M546050W
	4.6x75mm		XG18M546075W
	4.6x100mm		XG18M546100W
	4.6x150mm		XG18M546150W
	4.6x250mm		XG18M546250W

#### ■ Guard column for conventional

product name	P/N
Guard cartridge (4pieces) 4.0x10mm	XG18540010C
Guard cartridge Holder 4.0x10mm	HO00040010C
Guard cartridge Set 4.0x10mm ※	XG18540010W

※ Guard cartridge set = Holder (1piece) + cartridge 4.0x10mm (1piece)

### Semi-micro columns

Packing name	Column size (I.D. x Length)	Particle size	P/N
XG-C18M	2.0x35mm	3	XG18M320035W
	2.0x50mm		XG18M320050W
	2.0x75mm		XG18M320075W
	2.0x100mm		XG18M320100W
	2.0x150mm		XG18M320150W
	2.0x250mm		XG18M320250W
	2.0x35mm	5	XG18M520035W
	2.0x50mm		XG18M520050W
	2.0x75mm		XG18M520075W
	2.0x100mm		XG18M520100W
	2.0x150mm		XG18M520150W
	2.0x250mm		XG18M520250W

#### ■ Guard column for Semi-micro

product name	P/N
Guard cartridge (4pieces) 1.5x10mm	XG18515010C
Guard cartridge Holder 1.5x10mm	HO00015010C
Guard cartridge Set 1.5x10mm ※	XG18515010W

※ Guard cartridge set = Holder (1piece) + cartridge 1.5x10mm (1piece)

### Prep columns

Packing name	Column size (I.D. x Length)	Particle size	P/N
XG-C18M	10x150mm	5	XG18M5P1150W
	10x250mm		XG18M5P1250W
	20x150mm		XG18M5P2150W
	20x250mm		XG18M5P2250W

#### ■ Prep guard column

Packing name	Column size (I.D. x Length)	Particle size	P/N
XG-C18M	8.0x10mm (for I.D. 10mm)	5	XG18M580010W
	20x50mm		XG18M5P2050W