ChromaNik Technologies Inc.

# SunShell PFP&C18 2.6 µm

Core Shell Particle

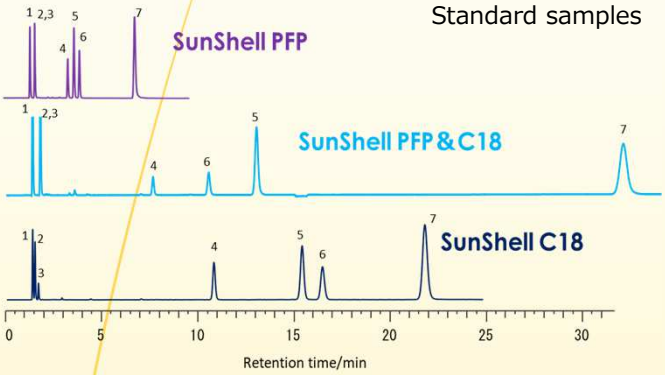
# Sunniest PFP&C18 5 µm

Totally porous particle

## Add C18 hydrophobicity to PFP separation! Increased retention and improved durability

### Comparison of separation

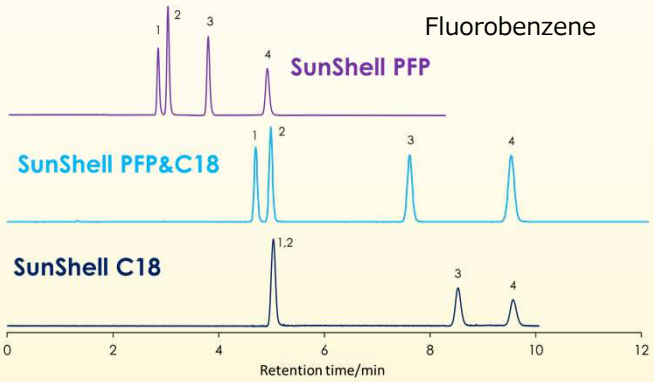
Standard samples



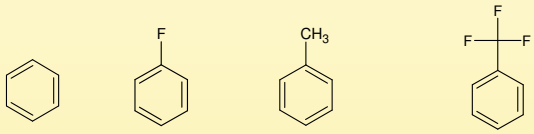

Column dimension: 4.6 x 150 mm
Mobile phase: $CH_3OH/H_2O$=75/25
Flow rate: 1.0 mL/min
Temperature: 40 ºC
Sample: 1 = Uracil, 2 = Caffeine, 3 = Phenol, 4 = Butylbenzene
5 = o-Terphenyl, 6 = Amylbenzene, 7 = Triphenylene

| | Hydrogen bond (Caffeine/Phenol) | Hydrophobicity (Amylbenzene/Butylbenzene) | Steric selectivity (Triphenylene/o-Terphenyl) |
|---|---|---|---|
| PFP | 1.00 | 1.31 | 2.38 |
| PFP&C18 | 1.00 | 1.47 | 2.64 |
| C18 | 0.39 | 1.60 | 1.46 |

Fluorobenzene

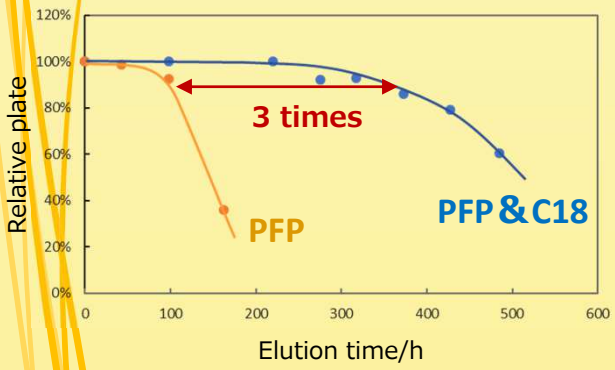



Column: SunShell PFP 2.6 µm, 4.6 x 150 mm
SunShell PFP&C18 2.6 µm, 4.6 x 150 mm
SunShell C18 2.6 µm, 4.6 x 150 mm
Mobile phase: Methanol/water=60/40
Flow rate: 1.0 mL / min
Temperature: 40 ºC
Detection: UV@250 nm
Sample:
1 = Benzene, 2 = Fluorobenzene, 3 = Toluene, 4 = α,α,α-Trifluorotoluene




**Compared to PFP, PFP & C18 has the same stereoselectivity, but the hydrophobicity is greatly increased and the retention time is extended. PFP & C18 has achieved the same separation as that of PFP, such as the separation of fluorobenzenes.**

### Stability test




**Conditions for durability testing**
Column: Sunniest PFP&C18 5 µm, 2.1x150 mm
Sunniest PFP 5 µm, 2.1x150 mm
Mobil phase: $CH_3OH$/20mM PB pH7.0=70/30
Flow rate: 0.2 mL/min
Temperature: 40 ºC

**Conditions for measuring theoretical plates**
Column: PFP&C18 5 µm, 2.1x150 mm
PFP 5 µm, 2.1x150 mm
Mobil phase: Acetonitrile/water=70/30
Acetonitrile/water=60/40
Flow rate: 0.2 mL/min
Temperature: 40 ºC
Sample: Acenaphthene

**Due to the increased hydrophobicity of the surface, the durability of PFP & C18 is approximately three times that of conventional PFP.**

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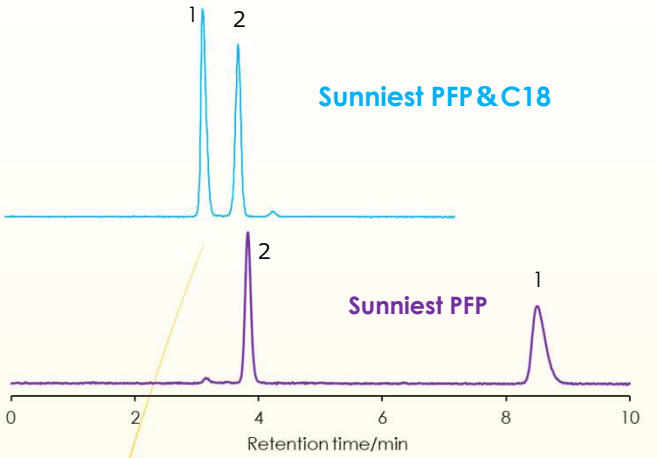
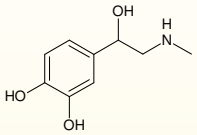
## Comparison of retention times for highly polar compounds



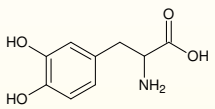

Column: Sunniest PFP&C18, PFP 5 µm, 150 x 4.6 mm
Mobile phase: 12.5 mM Ammonium Formate (pH3)
Flow rate: 1.0 mL/min
Temperature: 25 °C
Detection: UV@260nm

1




Epinephrine

2




Levodopa

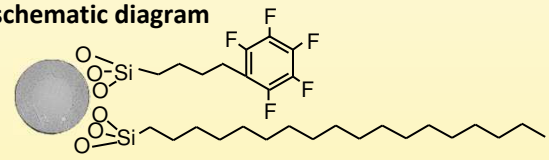
**In the separation of highly polar compounds such as catecholamines, the selectivity of PFP and PFP & C18 changes greatly, and PFP tends to be more retained.**

## ◆ Specification of SunShell PFP&C18, Sunniest PFP&C18

| | Core shell silica and totally porous silica | | | | Bonded phase | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Pore size (µm) | Core diameter (µm) | Pore diameter (nm) | Specific surface area ($m^2$/g) | Carbon loading (%) | Stationary phase | USP L line | End-capping | Maximum pressure | pH range |
| SunShell PFP&C18 | 2.6 µm | 1.6 µm | 9 nm | 150 $m^2$/g | 6% | Pentafluorophenyl + C18 | L43 | TMS end-capping | 60 MPa | 2 - 8 |
| Sunniest PFP&C18 | 5 µm | 0 µm | 12 nm | 340 $m^2$/g | 14% | Pentafluorophenyl + C18 | L43 | TMS end-capping | 30 MPa | 2 - 8 |

※For the maximum operating pressure, the value described in the test report of each column has priority over the above value.

**PFP&C18 stationary phase schematic diagram**




## ◆ Ordering information

| | Inner diameter (mm) | 2.1 | 3.0 | 4.6 | 10 | 20 | USP category |
|---|---|---|---|---|---|---|---|
| | Length (mm) | Catalog No. | Catalog No. | Catalog No. | Catalog No. | Catalog No. | |
| SunShell PFP&C18, 2.6 µm | 30 | CV6931 | CV6331 | CV6431 | ------ | ------ | L43 |
| | 50 | CV6941 | CV6341 | CV6441 | ------ | ------ | |
| | 75 | CV6951 | CV6351 | CV6451 | ------ | ------ | |
| | 100 | CV6961 | CV6361 | CV6461 | ------ | ------ | |
| | 150 | CV6971 | CV6371 | CV6471 | ------ | ------ | |

| | Inner diameter (mm) | 2.1 | 3.0 | 4.6 | 10 | 20 | USP category |
|---|---|---|---|---|---|---|---|
| | Length (mm) | Catalog No. | Catalog No. | Catalog No. | Catalog No. | Catalog No. | |
| Sunniest PFP&C18, 5 µm | 50 | EV3241 | EV3341 | EV3441 | ------ | ------ | L43 |
| | 100 | EV3261 | EV3361 | EV3461 | ------ | ------ | |
| | 150 | EV3271 | EV3371 | EV3471 | ------ | ------ | |
| | 250 | EV3281 | EV3381 | EV3481 | EV3781 | EV3881 | |