DEHP Analysis - COSMOSIL 2.5 Series

COSMOSIL UHPLC columns with 2.5 µm particle enables separation of DEHP (Bis(2-ethylhexyl)phthalate).

Packing Material	2.5C_{18}-MS-II	2.5Cholester	2.5πNAP
Silica Gel	High Purity Porous Spherical Silica		
Average Particle Size	2.5 µm		
Average Pore Size	approx. 130 Å		
Specific Surface Area	approx. 330 m^2/g		
Stationary Phase	Octadecyl Group	Cholesteryl Group	Naphtylethyl Group
Bonding Type	Monomeric		
Main Interaction	Hydrophobic Interaction	Hydrophobic Interaction Molecular Shape Selectivity	Hydrophobic Interaction π-π Interaction
End Capping Treatment	Near-perfect Treatment		

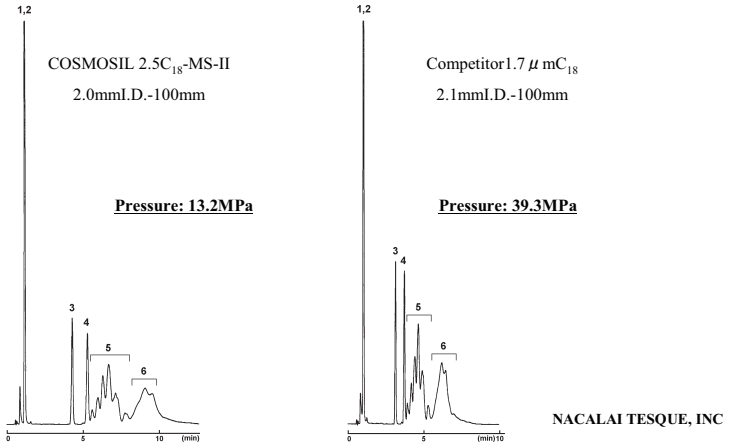
■ Analysis with Ammonium Acetate (Taiwan FDA condition)

COSMOSIL 2.5C_{18}-MS-II shows an equivalent chromatogram compared with competitors' 1.7µm column. 2.5C_{18}-MS-II has a longer retention time. Moreover, 2.5C_{18}-MS-II can be used under 1/3 pressure of competitor's 1.7 µm column. This is the pressure within the range of conventional HPLC equipment.

COSMOSIL Application Data

Column:
Column size: 2.0mmI.D.-100mm
Mobile phase: Methanol/ 5mmol CH_3COONH_4 = 90/10
Flow rate: 0.35 ml/min
Temperature: 40°C
Detection: UV220nm

Sample: 1; DBP (0.05mg/ml)
2; BBP (0.05mg/ml)
3; DEHP (0.05mg/ml)
4; DNOP (0.05mg/ml)
5; DINP (0.25mg/ml)
6; DIDP (0.25mg/ml)
Injection Vol. 5.0 µl



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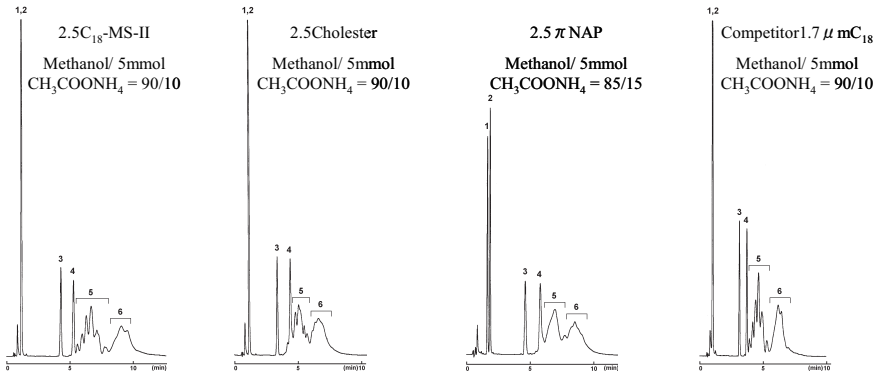
COSMOSIL 2.5πNAP enables separation of DBP(Dibutyl Phthalate)(Sample 1) and BBP (Butyl Benzyl Phtharate)(Sample 2) that are difficult to separate with C_{18} columns.

COSMOSIL Application Data

Column:
Column size: 2.0mmI.D.-100mm
Mobile phase:
Flow rate: 0.35 ml/min
Temperature: 40°C
Detection: UV220nm

Sample: 1; DBP (0.05mg/ml)
2; BBP (0.05mg/ml)
3; DEHP (0.05mg/ml)
4; DNOP (0.05mg/ml)
5; DINP (0.25mg/ml)
6; DIDP (0.25mg/ml)
Injection Vol. 5.0 µl



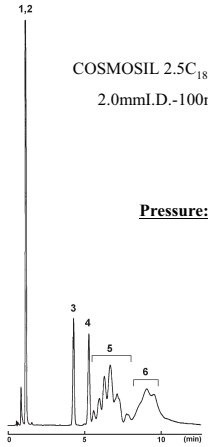
■ Analysis without Ammonium Acetate

Taiwan FDA condition offers an analysis with 5 mmol/l ammonium acetate by LC/MS/MS to increase sensitivity. However the amount of DEHP in this case is enough to detect by UV-absorption. The followings are analysis without ammonium acetate by UV-adsorption. They show the same separation ability as the analysis with ammonium acetate.

COSMOSIL Application Data

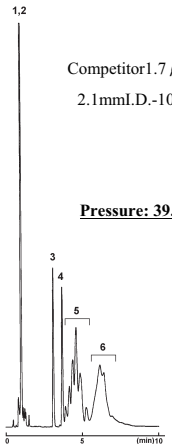
Column:
Column size:
Mobile phase: Methanol/H_2O = 90/10
Flow rate: 0.35 ml/min
Temperature: 40°C
Detection: UV220nm

Sample: 1; DBP (0.05mg/ml)
2; BBP (0.05mg/ml)
3; DEHP (0.05mg/ml)
4; DNOP (0.05mg/ml)
5; DINP (0.25mg/ml)
6; DIDP (0.25mg/ml)
Injection Vol. 5.0 μl



COSMOSIL 2.5C_{18}-MS-II
2.0mmI.D.-100mm

Pressure: 13.2MPa



Competitor1.7 μ mC_{18}
2.1mmI.D.-100mm

Pressure: 39.3MPa

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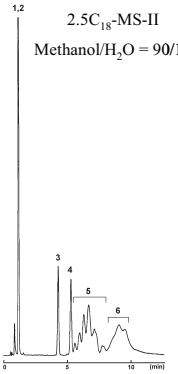
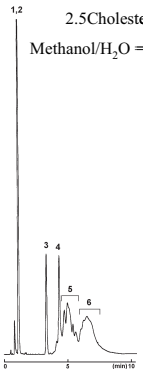
COSMOSIL Application Data

Column:
Column size: 2.0mmI.D.-100mm
Mobile phase:
Flow rate: 0.35 ml/min
Temperature: 40°C
Detection: UV220nm

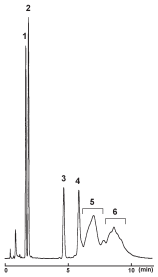
Sample: 1; DBP (0.05mg/ml)
2; BBP (0.05mg/ml)
3; DEHP (0.05mg/ml)
4; DNOP (0.05mg/ml)
5; DINP (0.25mg/ml)
6; DIDP (0.25mg/ml)
Injection Vol. 5.0 μl



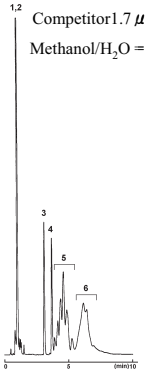
2.5C_{18}-MS-II
Methanol/H_2O = 90/10



2.5Cholester
Methanol/H_2O = 90/10



2.5 π NAP
Methanol/H_2O = 85/15



Competitor1.7 μ mC_{18}
Methanol/H_2O = 90/10

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The quality for certainty.

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