

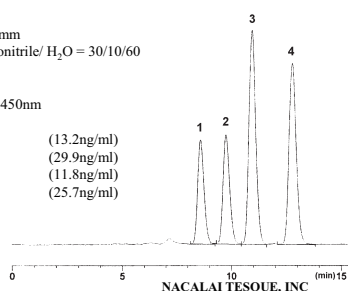
High Performance Liquid Chromatography (HPLC) is a suitable technique for analysis of harmful food additives and contaminants. COSMOSIL ODS and special columns offer improved separation for a large variety of these substances.

(1) Aflatoxins

COSMOSIL Application Data

Column: 5C₁₈-AR-II
 Column size: 4.6mm I.D.-150mm
 Mobile phase: Methanol/ Acetonitrile/ H₂O = 30/10/60
 Flow rate: 0.8 ml/min
 Temperature: 40°C
 Detection: Ex.365nm Em.450nm

Sample: 1; Aflatoxin G2 (13.2ng/ml)
 2; Aflatoxin G1 (29.9ng/ml)
 3; Aflatoxin B2 (11.8ng/ml)
 4; Aflatoxin B1 (25.7ng/ml)
 Inj.Vol. 20 µl



Data courtesy of a customer

AP-1148

Aflatoxins are naturally occurring mycotoxins. They can colonize and contaminate grains before harvesting or during storage. Aflatoxins are among the most carcinogenic substances known. COSMOSIL 5C₁₈-AR-II can be used to separate aflatoxins.

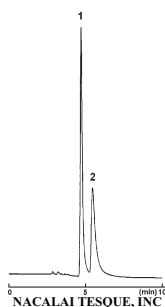


(2) 2- and 4-methylimidazole (2-MI and 4-MI)

COSMOSIL Application Data

Column: HILIC
 Column size: 4.6mm I.D.-250mm
 Mobile phase: Acetonitrile/ 50mmol/l Ammonium Acetate = 90/10
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: UV220nm

Sample: 1; 4-Methylimidazole (0.25mg/ml)
 2; 2-Methylimidazole (0.25mg/ml)
 Inj.Vol.: 1.0µl



AP-1203

2- and 4-methylimidazole (2-MI and 4-MI) are by-products formed during the manufacturing of caramel coloring used in popular soft drinks and foods. These two chemicals are selected by the National Cancer Institute for a long-term study because of the high potential for human exposure. The gas chromatography and reversed-phase HPLC columns with ion-pairing reagent have been traditionally used, but COSMOSIL HILIC offers complete separation of 2- and 4-methylimidazole without ion-pairing reagent.



(3) Melamines

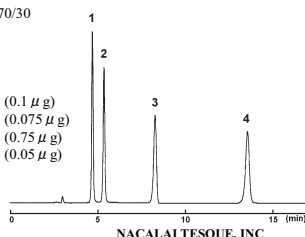
After recent melamine contamination in pet food and dairy products, determination of melamine has become a high priority. COSMOSIL HILIC offers excellent separation of melamine and cyanuric acid. They form a crystalline complex that is more toxic than either one alone.

• Melamines

COSMOSIL Application Data

Column: HILIC
 Column size: 4.6mm I.D.-250mm
 Mobile phase: Acetonitrile/ 10mmol/l Ammonium Acetate = 70/30
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: UV225nm

Sample: 1; Melamine (0.1 µg)
 2; Ammeline (0.075 µg)
 3; Cyanuric Acid (0.75 µg)
 4; Ammelide (0.05 µg)



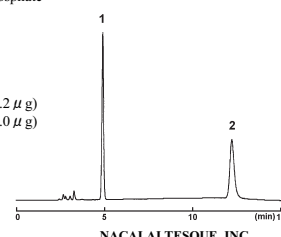
AP-1076

• Oxalic Acids

COSMOSIL Application Data

Column: HILIC
 Column size: 4.6mm I.D.-250mm
 Mobile phase: Acetonitrile/ 10mmol/l Phosphate buffer(pH7.0) = 50/50
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: UV210nm

Sample: 1; Oxamic Acid (0.2 µg)
 2; Oxalic Acid (1.0 µg)



AP-0307

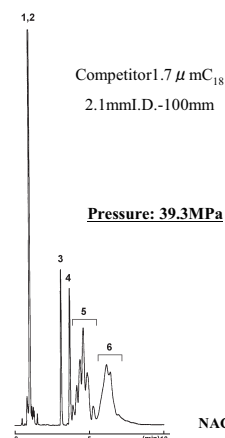
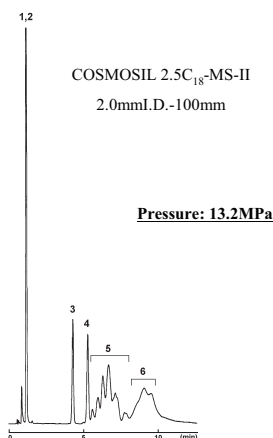
(4) DEHP (Bis(2-ethylhexyl)phthalate)

A few years ago, news reported that DEHP (Bis(2-ethylhexyl)phthalate), a plasticizer, has contaminated the food supply. If taken into the human body in large amounts, DEHP can cause cancer in addition to the risk of liver function damages. COSMOSIL 2.5C₁₈-MS-II produces an equivalent chromatogram compared with a competitor's 1.7µm column. 2.5C₁₈-MS-II has longer retention time. More importantly, 2.5C₁₈-MS-II operates about 1/3 the pressure of competitor's 1.7 µm column, putting it within the range of conventional HPLC equipment.

COSMOSIL Application Data

Column:
Column size:
Mobile phase: Methanol/H₂O = 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



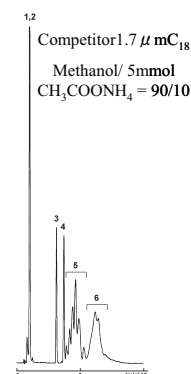
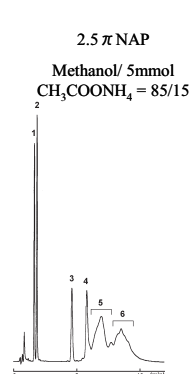
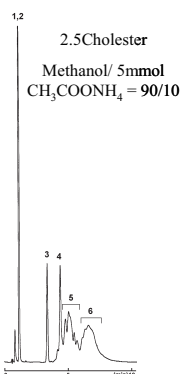
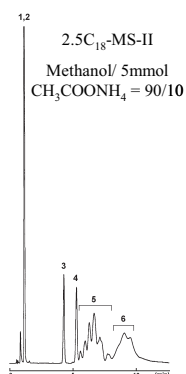
NACALAI TESQUE, INC

COSMOSIL 2.5πNAP enables separation of DBP(Dibutyl Phthalate)(Sample 1) and BBP (Butyl Benzyl Phtharate)(Sample 2) that are difficult to separate with C₁₈ 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



For research use only, not intended for diagnostic or drug use.