

Applications and Index

HPLC Applications.....	130
Pharmaceutical.....	131
Food / Environmental	141
Life Science	149
Others	150
GC Applications.....	151
Environmental.....	154
Petrochemicals	168
Chemicals.....	183
Solvents	192
Food.....	200
Pharmaceutical.....	208
SPE Applications	213
Food.....	214
Environmental.....	229
Pharmaceutical.....	231
Others	232
Compound Index.....	233
Product Index	240

HPLC Applications Index

Industry Index

Pharmaceutical	131
Food / Environmental	141
Life Science	149
Others	150

Product Index

Bio-Bond™

Proteins	149
----------------	-----

Endeavorsil™

Acidic Compounds	141
Antiacidants	131
Antibacterials	132
Antifungals	141
Anti-inflammatories	133
β-Blockers at Low pH	134
β-Blockers at Neutral pH	134
Catecholamine	135
Parabens	145
Polar Acids	147
Steroids	150
TCAs at Low pH	140

Inspire™

Alkaloids	131
Antiacidants	132
Antibacterials	132
Antifungals	141
Antihistamines	133
Anti-inflammatories	133
Antioxidants	149
Benzoylurea and Bishydrazide Mixture	142
Caffeine Metabolites	142
Catecholamine	135
Cephalosporin Antibiotics	135, 136
Colorants	143
Derivatized Carbonyl Compounds	143
Flavonoids	138
Herbicides	143
Melamine	144
Organic Acids	144
Parabens	145
Penicillins	138
Polar Acids	146
Quinolones	139
Steroids	150
Sweeteners	147
TCAs and Benzos	139
TCAs at Low pH	140
Unsaturated Fatty Acids	148

Leapsil™

Antibacterials	132
Antifungals	141
Anti-inflammatories	133
β-Blockers at Low pH	134
β-Blockers at Neutral pH	134
Parabens	146
Polar Acids	147
Polar Bases	139
Water-Soluble Vitamins	140

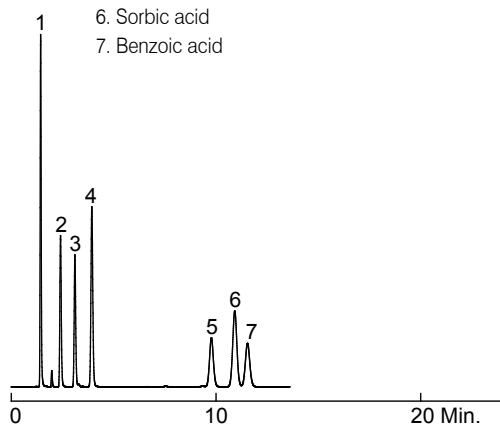
Spursil™

Acidic Compounds	131
Benzoic Acid and Sorbic Acid in Milk	142
Benzoyl Peroxide in Wheat Flour	142
Catecholamine	135
Catechols and Resorcinols	143
Cephalosporin Antibiotics	136, 137
Flavonoids	138
Herbicides	144
Organic Acids	145
Phenols	146, 150
Sweeteners	147, 148
TCAs and Benzos	139

Acidic Compounds

Column: Spursil™ 5 µm C18, 150 x 4.6 mm
 Cat. No.: **82001**
 Mobile Phase: 0.1% HCOOH in MeCN:0.1% HCOOH in H₂O = 20:80
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 254 nm
 Sample:

1. L-Ascorbic acid
2. Acetaminophen
3. *p*-Aminobenzoic acid
4. Homovanillic acid
5. Acetylsalicylic acid
6. Sorbic acid
7. Benzoic acid

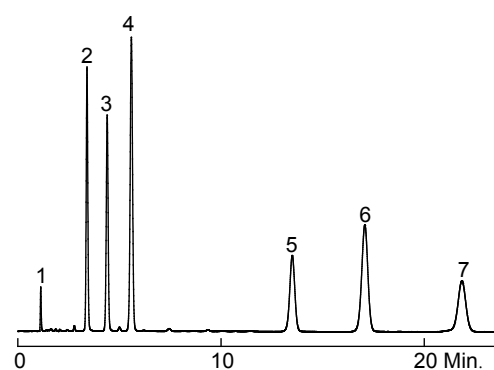


AN: S1167

Acidic Compounds

Column: Spursil™ 5 µm C18-EP, 150 x 4.6 mm
 Cat. No.: **82101**
 Mobile Phase: 0.1% HCOOH in MeCN:0.1% HCOOH in H₂O = 20:80
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 254 nm
 Sample:

1. L-Ascorbic acid
2. Acetaminophen
3. *p*-Aminobenzoic acid
4. Homovanillic acid
5. Acetylsalicylic acid
6. Sorbic acid
7. Benzoic acid

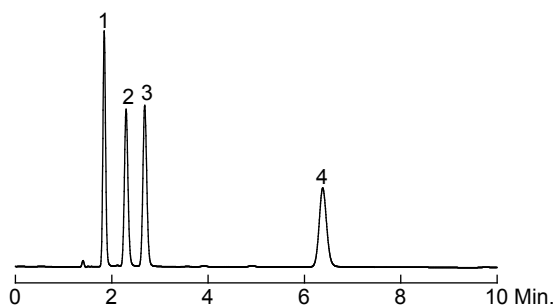


AN: S1168

Alkaloids

Column: Inspire™ 5 µm C18, 150 x 4.6 mm
 Cat. No.: **81001**
 Mobile Phase: MeOH:20 mM KH₂PO₄ (pH 2.3) = 42:58
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 254 nm
 Sample:

1. Theobromine
2. Quinine
3. Hydrastine
4. Berberine

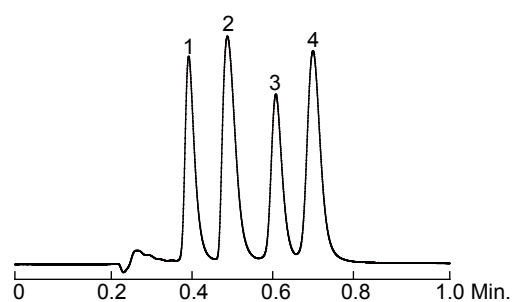


AN: I1101

Antiacid

Column: Endeavorsil™ 1.8 µm C18, 50 x 2.1 mm
 Cat. No.: **87002**
 Mobile Phase: MeOH:10 mM CH₃COONH₄ (pH 7) = 35:65
 Flow Rate: 0.5 mL/min
 Temperature: 30 °C
 Detection: UV 220 nm
 Sample:

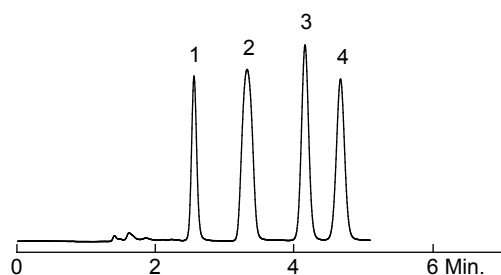
1. Famotidine
2. Ranitidine
3. Cimetidine
4. Nizatidine



AN: E1101

Antiacid

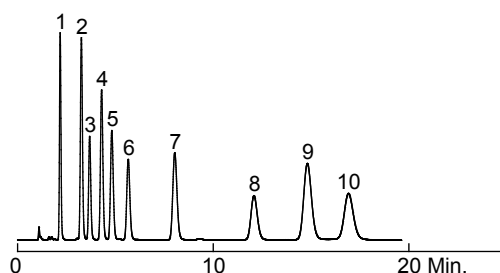
Column: Inspire™ 5 μm C18, 150 x 4.6 mm
 Cat. No.: **81001**
 Mobile Phase: MeOH:10 mM CH₃COONH₄ (pH 7) = 35:65
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 220 nm
 Sample: 1. Famotidine
 2. Ranitidine
 3. Cimetidine
 4. Nizatidine



AN: I1102

Antibacterials

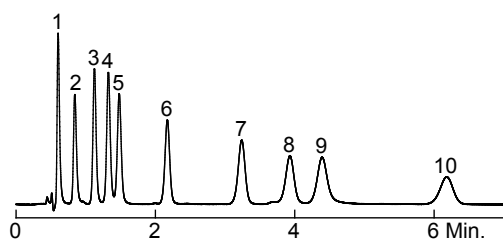
Column: Inspire™ 5 μm C18, 150 x 4.6 mm
 Cat. No.: **81001**
 Mobile Phase: 0.1% HCOOH in MeCN:0.1% HCOOH in H₂O = 20:80
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 254 nm
 Sample: 1. Sulfanilamide 6. Sulfamethoxyipyridazine
 2. Carbadox 7. Furazolidone
 3. Sulfapyridine 8. Sulfamethoxazole
 4. Sulfamerazine 9. Sulfisoxazole
 5. Thiamphenicol 10. Oxolinic acid



AN: I1103

Antibacterials

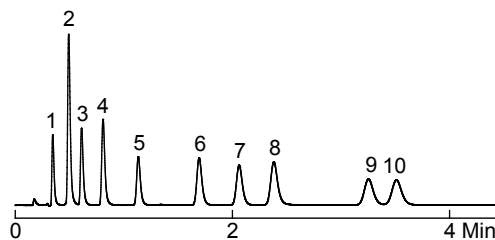
Column: Leapsil™ 2.7 μm C18, 50 x 2.1 mm
 Cat. No.: **86004**
 Mobile Phase: 0.1% HCOOH in MeCN:0.1% HCOOH in H₂O = 20:80
 Flow Rate: 0.3 mL/min
 Temperature: Ambient
 Detection: UV 254 nm
 Sample: 1. Sulfanilamide
 2. Carbadox
 3. Sulfamerazine
 4. Sulfamethazine
 5. Sulfamethoxyipyridazine
 6. Furazolidone
 7. Sulfamethoxazole
 8. Sulfisoxazole
 9. Oxolinic acid
 10. Sulfadimethoxine



AN: I1101

Antibacterials

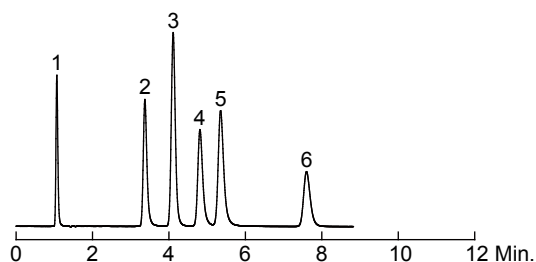
Column: Endeavorsil™ 1.8 μm C18, 50 x 2.1 mm
 Cat. No.: **87002**
 Mobile Phase: 0.1% HCOOH in MeCN:0.1% HCOOH in H₂O = 20:80
 Flow Rate: 0.5 mL/min
 Temperature: Ambient
 Detection: UV 254 nm
 Sample: 1. Sulfanilamide
 2. Carbadox
 3. Sulfamerazine
 4. Sulfamethoxyipyridazine
 5. Furazolidone
 6. Sulfamethoxazole
 7. Sulfisoxazole
 8. Oxolinic acid
 9. Sulfadimethoxine
 10. Sulfaquinoxaline



AN: E1102

Antihistamines

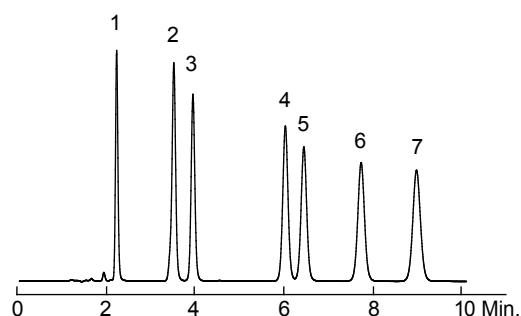
Column: Inspire™ 5 µm C18, 150 x 4.6 mm
 Cat. No.: **81001**
 Mobile Phase: MeOH:5 mM NH₄HCO₃ (pH 10) = 75:25
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 254 nm
 Sample: 1. Maleic acid
 2. Pheniramine
 3. Doxylamine
 4. Chlorpheniramine
 5. Brompheniramine
 6. Diphenhydramine



AN: I1104

Anti-inflammatories

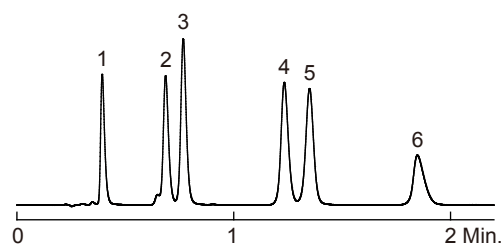
Column: Inspire™ 5 µm C18, 150 x 4.6 mm
 Cat. No.: **81001**
 Mobile Phase: 0.1% HCOOH in MeCN:0.1% HCOOH in H₂O = 55:45
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 254 nm
 Sample: 1. Phenacetin
 2. Tolmetin
 3. Ketoprofen
 4. Fenoprofen
 5. Flurbiprofen
 6. Diclofenac
 7. Ibuprofen



AN: I1105

Anti-inflammatories

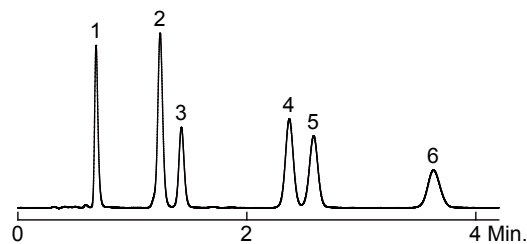
Column: Endeavorsil™ 1.8 µm C18, 50 x 2.1 mm
 Cat. No.: **87002**
 Mobile Phase: 0.1% HCOOH in MeCN:0.1% HCOOH in H₂O = 50:50
 Flow Rate: 0.5 mL/min
 Temperature: 30 °C
 Detection: UV 254 nm
 Sample: 1. Phenacetin
 2. Tolmetin
 3. Ketoprofen
 4. Fenoprofen
 5. Flurbiprofen
 6. Ibuprofen



AN: E1103

Anti-inflammatories

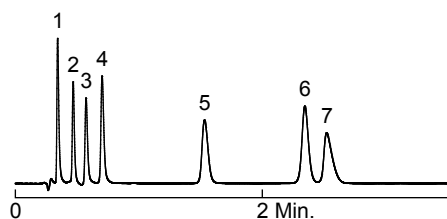
Column: Leapsil™ 2.7 µm C18, 50 x 2.1 mm
 Cat. No.: **86004**
 Mobile Phase: 0.1% HCOOH in MeCN:0.1% HCOOH in H₂O = 50:50
 Flow Rate: 0.3 mL/min
 Temperature: Ambient
 Detection: UV 254 nm
 Sample: 1. Phenacetin
 2. Tolmetin
 3. Ketoprofen
 4. Fenoprofen
 5. Flurbiprofen
 6. Ibuprofen



AN: L1102

β -Blockers at Low pH

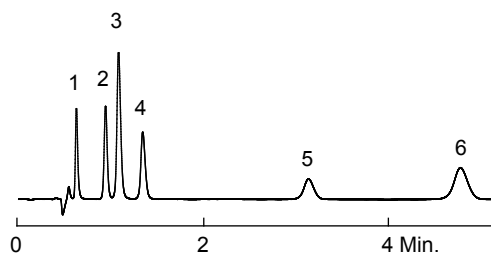
Column: Endeavorsil™ 1.8 μ m C18, 50 x 2.1 mm
 Cat. No.: **87002**
 Mobile Phase: 0.1% TFA in MeCN:0.1% TFA in H₂O = 25:75
 Flow Rate: 0.5 mL/min
 Temperature: 30 °C
 Detection: UV 220 nm
 Sample: 1. Nadolol
 2. Pindolol
 3. Acebutolol
 4. Metoprolol
 5. Labetolol
 6. Propranolol
 7. Alprenolol



AN: E1104

β -Blockers at Low pH

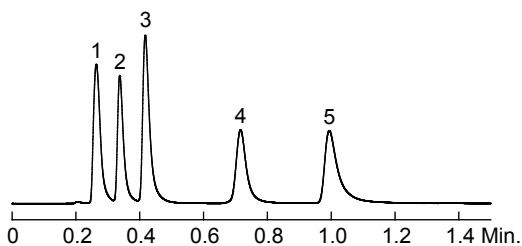
Column: Leapsil™ 2.7 μ m C18, 50 x 2.1 mm
 Cat. No.: **86004**
 Mobile Phase: 0.1% TFA in MeCN:0.1% TFA in H₂O = 25:75
 Flow Rate: 0.3 mL/min
 Temperature: 30 °C
 Detection: UV 220 nm
 Sample: 1. Nadolol
 2. Pindolol
 3. Acebutolol
 4. Metoprolol
 5. Labetolol
 6. Propranolol



AN: L1103

β -Blockers at Neutral pH

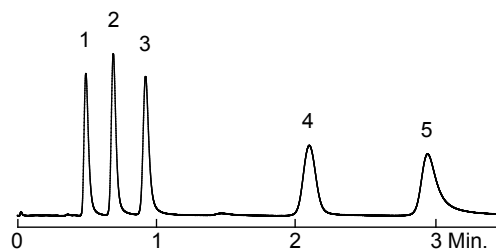
Column: Endeavorsil™ 1.8 μ m C18, 50 x 2.1 mm
 Cat. No.: **87002**
 Mobile Phase: MeCN:20 mM phosphate buffer (pH 7) = 30:70
 Flow Rate: 0.5 mL/min
 Temperature: 30 °C
 Detection: UV 220 nm
 Sample: 1. Nadolol
 2. Pindolol
 3. Metoprolol
 4. Labetolol
 5. Propranolol



AN: E1105

β -Blockers at Neutral pH

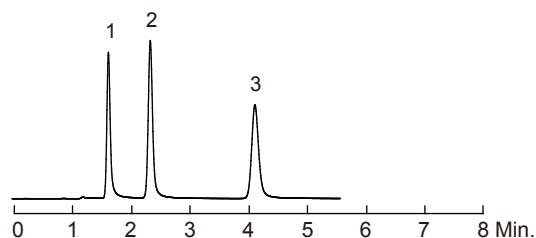
Column: Leapsil™ 2.7 μ m C18, 50 x 2.1 mm
 Cat. No.: **86004**
 Mobile Phase: MeCN:20 mM phosphate buffer (pH 7) = 25:75
 Flow Rate: 0.3 mL/min
 Temperature: Ambient
 Detection: UV 220 nm
 Sample: 1. Nadolol
 2. Pindolol
 3. Metoprolol
 4. Labetolol
 5. Propranolol



AN: L1104

Catecholamine

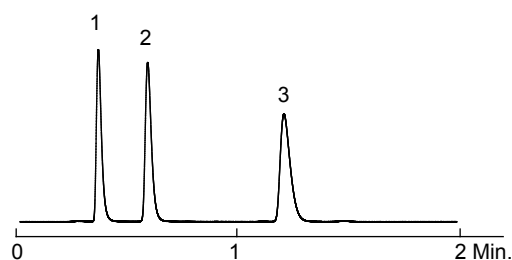
Column: Inspire™ 5 μm C18, 150 x 4.6 mm
 Cat. No.: **81001**
 Mobile Phase: 20 mM KH₂PO₄, pH 7
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 270 nm
 Sample: 1. Norepinephrine
 2. Epinephrine
 3. Dopamine



AN: I1106

Catecholamine

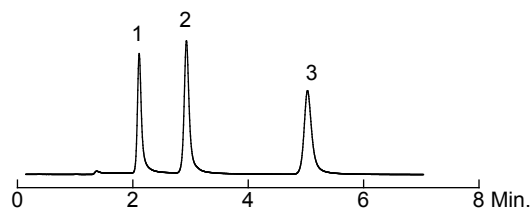
Column: Endeavorsil™ 1.8 μm C18, 50 x 2.1 mm
 Cat. No.: **87002**
 Mobile Phase: 0.1% TFA in H₂O
 Flow Rate: 0.5 mL/min
 Temperature: Ambient
 Detection: UV 270 nm
 Sample: 1. Norepinephrine
 2. Epinephrine
 3. Dopamine



AN: E1106

Catecholamine

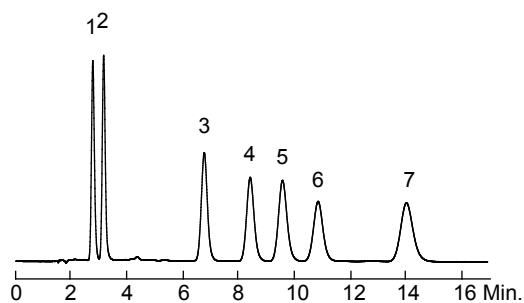
Column: Spursil™ 5 μm C18, 150 x 4.6 mm
 Cat. No.: **82001**
 Mobile Phase: 20 mM KH₂PO₄, pH 7
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 270 nm
 Sample: 1. Norepinephrine
 2. Epinephrine
 3. Dopamine



AN: S1152

Cephalosporin Antibiotics

Column: Inspire™ 5 μm C18, 150 x 4.6 mm
 Cat. No.: **81001**
 Mobile Phase: MeOH:0.1% TFA in H₂O = 30:70
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 230 nm
 Sample: 1. Ceftazidime
 2. Cefadroxil
 3. Cefazoline
 4. Cefaclor
 5. Cephalexin
 6. Cefoxitin
 7. Cefradine

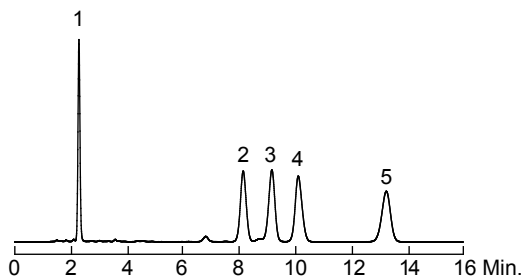


AN: I1123

Pharmaceutical

Cephalosporin Antibiotics

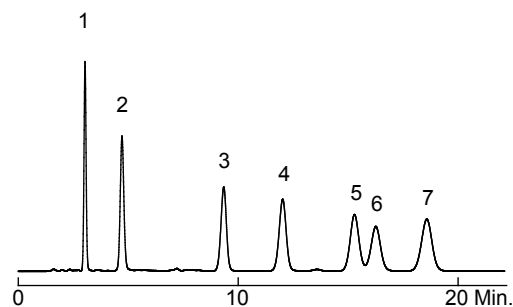
Column: Inspire™ 5 µm C18, 150 x 4.6 mm
Cat. No.: **81001**
Mobile Phase: MeOH:100 mM acetate buffer = 20:80
Flow Rate: 1.0 mL/min
Temperature: Ambient
Detection: UV 254 nm
Sample: 1. Cefadroxil
2. Cefuroxime
3. Cefaclor
4. Cefoxitin
5. Cefradine



AN: I1107

Cephalosporin Antibiotics

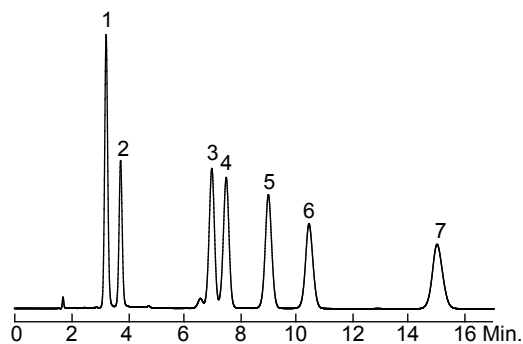
Column: Inspire™ 5 µm C18, 150 x 4.6 mm
Cat. No.: **81001**
Mobile Phase: MeOH:25 mM phosphate buffer (pH 3) = 20:80
Flow Rate: 1.0 mL/min
Temperature: Ambient
Detection: UV 230 nm
Sample: 1. Cefadroxil
2. Cefazidime
3. Cefaclor
4. Cephalixin
5. Cefazoline
6. Cefoxitin
7. Cefradine



AN: I1108

Cephalosporin Antibiotics

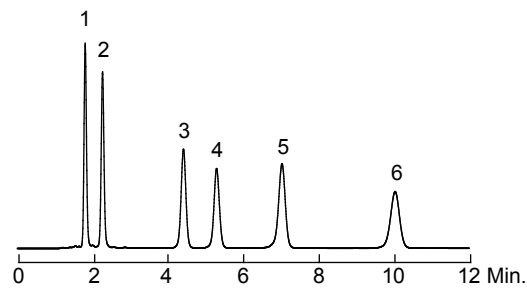
Column: Spursil™ 5 µm C18, 150 x 4.6 mm
Cat. No.: **82001**
Mobile Phase: MeOH:0.1% TFA in H₂O = 30:70
Flow Rate: 1.0 mL/min
Temperature: Ambient
Detection: UV 230 nm
Sample: 1. Cefazidime
2. Cefadroxil
3. Cefuroxime
4. Cefazoline
5. Cefaclor
6. Cephalixin
7. Cefradine



AN: I1101

Cephalosporin Antibiotics

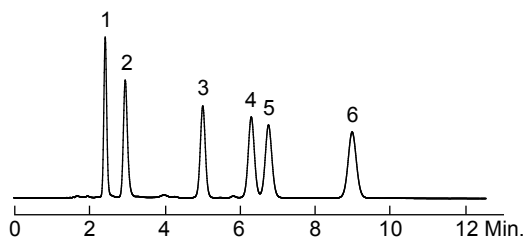
Column: Spursil™ 5 µm C18, 150 x 4.6 mm
Cat. No.: **82001**
Mobile Phase: MeOH:100 mM acetate buffer = 20:80
Flow Rate: 1.0 mL/min
Temperature: Ambient
Detection: UV 254 nm
Sample: 1. Cefazidime
2. Cefadroxil
3. Cefuroxime
4. Cefoxitin
5. Cefaclor
6. Cefradine



AN: E1102

Cephalosporin Antibiotics

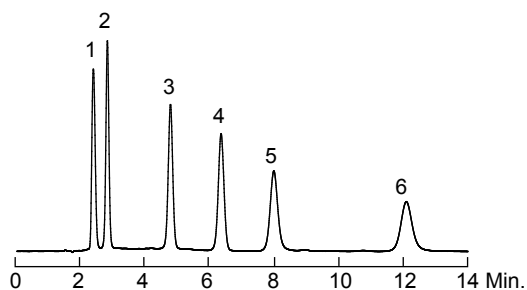
Column: Spursil™ 5 μm C18, 150 x 4.6 mm
 Cat. No.: **82001**
 Mobile Phase: MeOH:25 mM phosphate buffer (pH 3) = 25:75
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 230 nm
 Sample: 1. Cefadroxil
 2. Ceftazidime
 3. Cefaclor
 4. Cephalixin
 5. Cefazoline
 6. Cefradine



AN: D1150

Cephalosporin Antibiotics

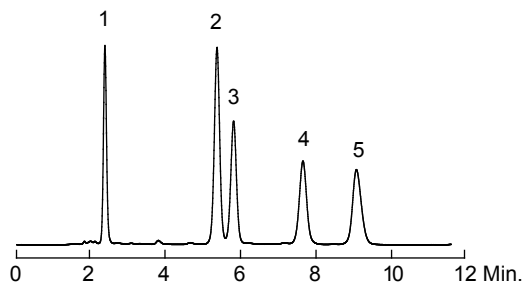
Column: Spursil™ 5 μm C18-EP, 150 x 4.6 mm
 Cat. No.: **82101**
 Mobile Phase: MeOH:0.1% TFA in H₂O = 30:70
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 230 nm
 Sample: 1. Ceftazidime
 2. Cefadroxil
 3. Cephalixin
 4. Cefradine
 5. Cefazoline
 6. Cefoxitin



AN: D1151

Cephalosporin Antibiotics

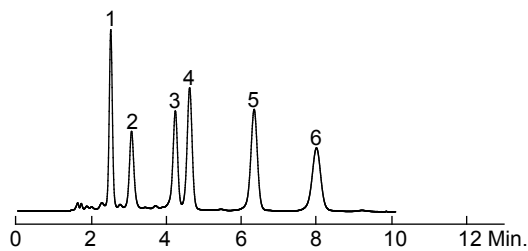
Column: Spursil™ 5 μm C18-EP, 150 x 4.6 mm
 Cat. No.: **82101**
 Mobile Phase: MeOH:100 mM acetate buffer = 20:80
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 254 nm
 Sample: 1. Ceftazidime
 2. Cephalixin
 3. Cefaclor
 4. Cefradine
 5. Cefoxitin



AN: I1101

Cephalosporin Antibiotics

Column: Spursil™ 5 μm C18-EP, 150 x 4.6 mm
 Cat. No.: **82101**
 Mobile Phase: MeOH:25 mM phosphate buffer (pH 3) = 25:75
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 230 nm
 Sample: 1. Cefadroxil
 2. Ceftazidime
 3. Cefaclor
 4. Cephalixin
 5. Cefradine
 6. Cefazoline

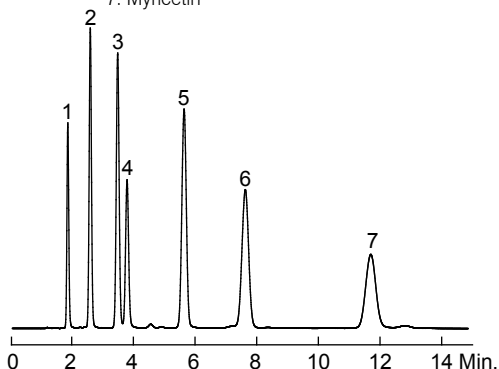


AN: E1101

Applications

Flavonoids

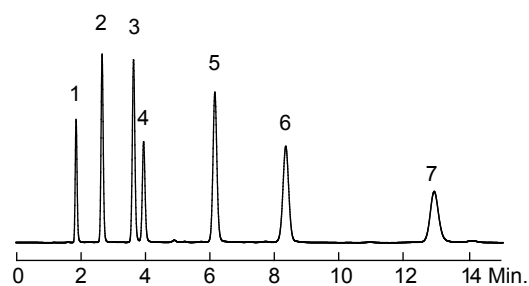
Column: Inspire™ 5 μm C18, 150 x 4.6 mm
 Cat. No.: **81001**
 Mobile Phase: MeCN:0.085% H₃PO₄ = 20:80
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 280 nm
 Sample: 1. Gallic acid
 2. Catechin
 3. Caffeic acid
 4. Vanillic acid
 5. *p*-Coumaric acid
 6. Quercitrin
 7. Myricetin



AN: I1109

Flavonoids

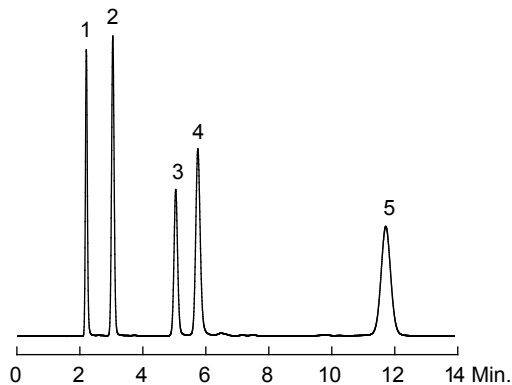
Column: Spursil™ 5 μm C18, 150 x 4.6 mm
 Cat. No.: **82001**
 Mobile Phase: MeCN:0.085% H₃PO₄ = 20:80
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 280 nm
 Sample: 1. Gallic acid
 2. Catechin
 3. Caffeic acid
 4. Vanillic acid
 5. *p*-Coumaric acid
 6. Quercitrin
 7. Myricetin



AN: S1154

Flavonoids

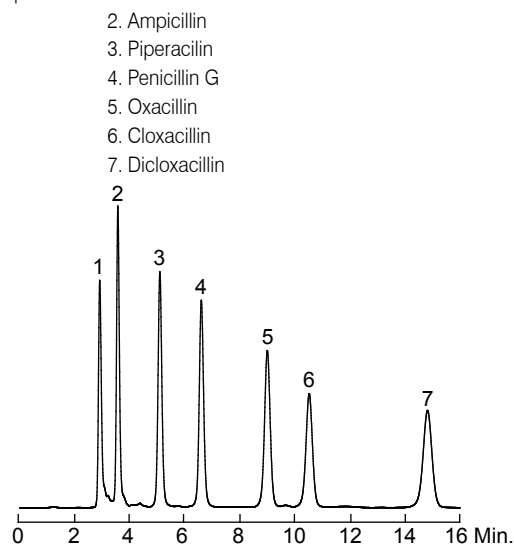
Column: Spursil™ 5 μm C18-EP, 150 x 4.6 mm
 Cat. No.: **82101**
 Mobile Phase: MeCN:0.085% H₃PO₄ = 25:75
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 280 nm
 Sample: 1. Gallic acid
 2. Catechin
 3. Vanillic acid
 4. Caffeic acid
 5. *p*-Coumaric acid



AN: S1169

Penicillins

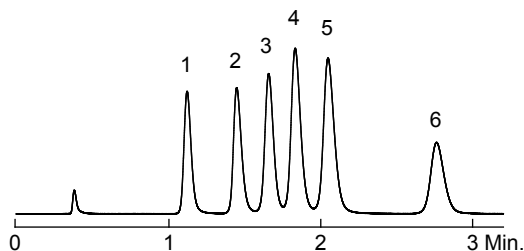
Column: Inspire™ 5 μm C18, 150 x 4.6 mm
 Cat. No.: **81001**
 Mobile Phase: MeOH:25 mM KH₂PO₄ = 55:45
 Flow Rate: 0.5 mL/min
 Temperature: Ambient
 Detection: UV 220 nm
 Sample: 1. Amoxicillin
 2. Ampicillin
 3. Piperacillin
 4. Penicillin G
 5. Oxacillin
 6. Cloxacillin
 7. Dicloxacillin



AN: I1125

Polar Bases

Column: Leapsil™ 2.7 μm C18, 50 x 2.1 mm
 Cat. No.: **86004**
 Mobile Phase: 0.1% TFA in MeCN:0.1% TFA in H₂O = 40:60
 Flow Rate: 0.3 mL/min
 Temperature: Ambient
 Detection: UV 254 nm
 Sample: 1. Doxepin
 2. Protriptyline
 3. Nortriptyline
 4. Amitriptyline
 5. Trimipramine
 6. Clomipramine

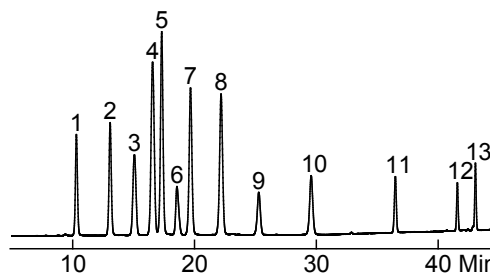


AN: L1105

Quinolones

Column: Inspire™ 5 μm C18, 250 x 4.6 mm
 Cat. No.: **81006**
 Mobile Phase A: MeOH
 Mobile Phase B: 0.2% H₃PO₄ in H₂O
 Flow Rate: 1.0 mL/min
 Temperature: 35 °C
 Detection: UV 254 nm
 Sample: 1. Marbofloxacin
 2. Ofloxacin
 3. Norfloxacin
 4. Enrofloxacin
 5. Ciprofloxacin
 6. Pazufloxacin
 7. Difloxacin
 8. Sarafloxacin
 9. Gatifloxacin
 10. Sparfloxacin
 11. Oxolinic acid
 12. Nalidixic acid
 13. Flumequine

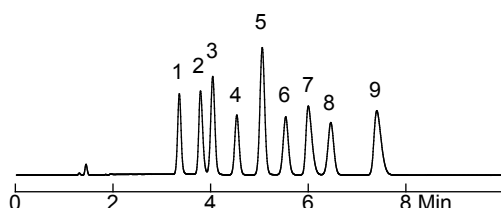
t / min.	0	25	40	42	50
A / %	22	33	65	22	22
B / %	78	67	35	78	78



AN: I1124

TCAs and Benzos

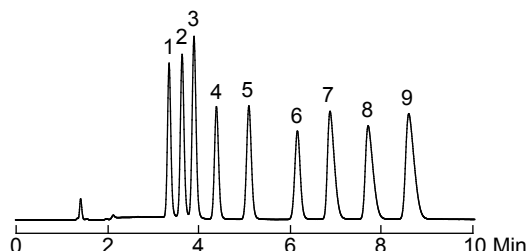
Column: Inspire™ 5 μm C18, 150 x 4.6 mm
 Cat. No.: **81001**
 Mobile Phase: 0.1% TFA in MeCN:0.1% TFA in H₂O = 40:60
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 254 nm
 Sample: 1. Nitrozepam
 2. Nordoxepin
 3. Alprazolam
 4. Diazepam
 5. Oxazepam
 6. Triazolam
 7. Nortriptyline
 8. Clonazepam
 9. Trimipramine



AN: I1112

TCAs and Benzos

Column: Spursil™ 5 μm C18, 150 x 4.6 mm
 Cat. No.: **82001**
 Mobile Phase: 0.1% TFA in MeCN:0.1% TFA in H₂O = 40:60
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 254 nm
 Sample: 1. Nitrozepam
 2. Estazolam
 3. Alprazolam
 4. Diazepam
 5. Triazolam
 6. Clonazepam
 7. Nortriptyline
 8. Amitriptyline
 9. Trimipramine



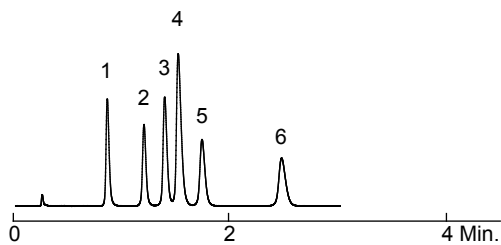
AN: S1155

Applications

Pharmaceutical

TCAs at Low pH

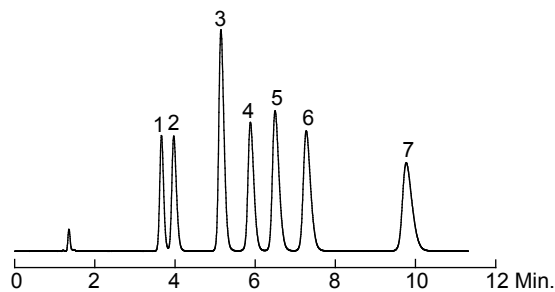
Column: Endeavorsil™ 1.8 μm C18, 50 x 2.1 mm
Cat. No.: **87002**
Mobile Phase: 0.1% TFA in MeCN:0.1% TFA in H₂O = 35:65
Flow Rate: 0.5 mL/min
Temperature: Ambient
Detection: UV 254 nm
Sample: 1. Doxepin
2. Desipramine
3. Nortriptyline
4. Amitriptyline
5. Trimipramine
6. Clomipramine



AN: E1107

TCAs at Low pH

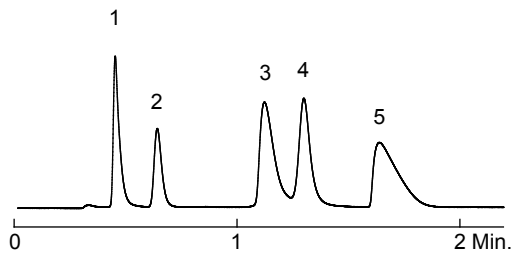
Column: Inspire™ 5 μm C18, 150 x 4.6 mm
Cat. No.: **81001**
Mobile Phase: 0.1% TFA in MeCN:0.1% TFA in H₂O = 40:60
Flow Rate: 1.0 mL/min
Temperature: Ambient
Detection: UV 254 nm
Sample: 1. Nordoxepin
2. Doxepin
3. Desipramine
4. Nortriptyline
5. Amitriptyline
6. Trimipramine
7. Clomipramine



AN: I1126

Water-Soluble Vitamins

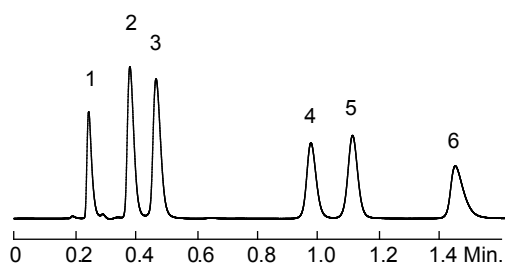
Column: Leapsil™ 2.7 μm C18, 50 x 2.1 mm
Cat. No.: **86004**
Mobile Phase: 10 mM HCOONH₄, pH 3
Flow Rate: 0.3 mL/min
Temperature: Ambient
Detection: UV 254 nm
Sample: 1. Pyridoxamine
2. L-Ascorbic acid
3. Pyridoxal
4. Nicotinamide
5. Pyridoxol



AN: L1106

Acidic Compounds

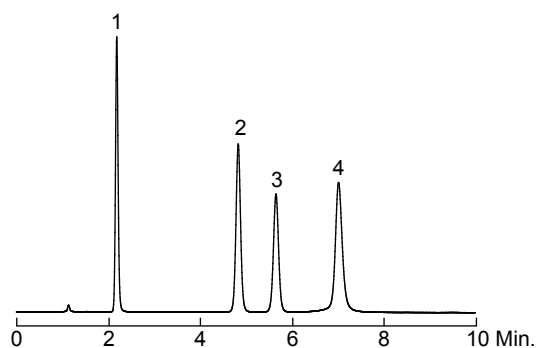
Column: Endeavorsil™ 1.8 μm C18, 50 x 2.1 mm
 Cat. No.: **87002**
 Mobile Phase: 0.1% HCOOH in MeCN:0.1% HCOOH in H₂O = 25:75
 Flow Rate: 0.5 mL/min
 Temperature: 30 °C
 Detection: UV 254 nm
 Sample: 1. L-Ascorbic acid
 2. p-Aminobenzoic acid
 3. Homovanillic acid
 4. Acetylsalicylic acid
 5. Sorbic acid
 6. Salicylic acid



AN: E1108

Antifungals

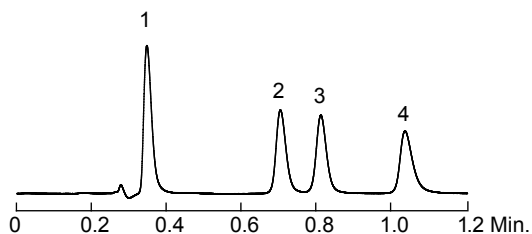
Column: Inspire™ 5 μm C18, 150 x 4.6 mm
 Cat. No.: **81001**
 Mobile Phase: 0.1% HCOOH in MeCN:0.1% HCOOH in H₂O = 30:70
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 254 nm
 Sample: 1. p-Aminobenzoic acid
 2. Acetylsalicylic acid
 3. Benzoic acid
 4. Salicylic acid



AN: I1114

Antifungals

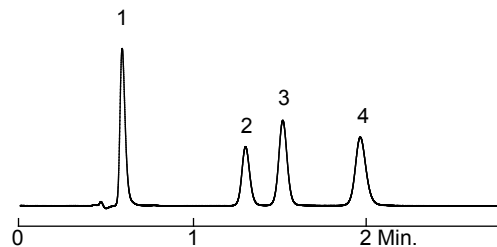
Column: Endeavorsil™ 1.8 μm C18, 50 x 2.1 mm
 Cat. No.: **87002**
 Mobile Phase: 0.1% HCOOH in MeCN:0.1% HCOOH in H₂O = 30:70
 Flow Rate: 0.5 mL/min
 Temperature: 30 °C
 Detection: UV 254 nm
 Sample: 1. p-Aminobenzoic acid
 2. Acetylsalicylic acid
 3. Benzoic acid
 4. Salicylic acid



AN: E1109

Antifungals

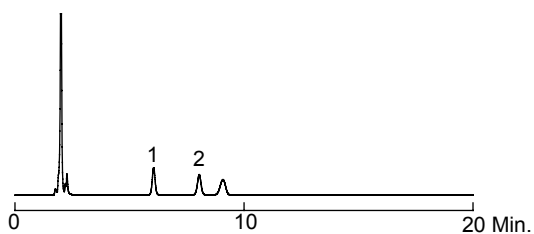
Column: Leapsil™ 2.7 μm C18, 50 x 2.1 mm
 Cat. No.: **86004**
 Mobile Phase: 0.1% HCOOH in MeCN:0.1% HCOOH in H₂O = 30:70
 Flow Rate: 0.3 mL/min
 Temperature: 30 °C
 Detection: UV 254 nm
 Sample: 1. p-Aminobenzoic acid
 2. Acetylsalicylic acid
 3. Benzoic acid
 4. Salicylic acid



AN: L1110

Benzoic Acid and Sorbic Acid in milk

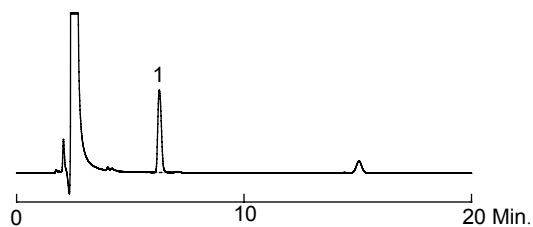
Column: Spursil™ 5 μm C18, 150 x 4.6 mm
 Cat. No.: **82006**
 Mobile Phase: MeOH:phosphate buffer = 10:90
 Flow Rate: 1.2 mL/min
 Injection Volume: 10 μL
 Temperature: 40 °C
 Detection: UV 227 nm
 Sample: 1. Benzoic acid
 2. Sorbic acid



AN: S1156

Benzoyl Peroxide in Wheat Flour

Column: Spursil™ 5 μm C18, 250 x 4.6 mm
 Cat. No.: **82006**
 Mobile Phase: MeOH:20 mM acetate buffer = 10:90
 Flow Rate: 1.0 mL/min
 Injection Volume: 10 μL
 Temperature: 30 °C
 Detection: UV 230 nm
 Sample: 1. Benzoyl peroxide

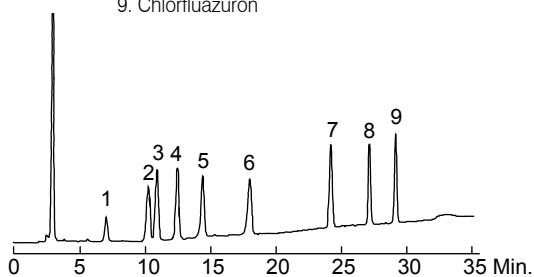


AN: S1157

Benzoylurea and Bishydrazide Mixture

Column: Inspire™ 5 μm C18, 250 x 4.6 mm
 Cat. No.: **81006**
 Mobile Phase A: MeOH
 Mobile Phase B: H₂O
 Flow Rate: 1.0 mL/min
 Temperature: 30 °C
 Detection: UV 248 nm
 Sample: 1. Methoxyfenozide
 2. Tebufenozide
 3. Diflubenzuron
 4. Chlorbenzuron
 5. Triflumuron
 6. Hexaflumuron
 7. Teflubenzuron
 8. Flufenoxuron
 9. Chlorfluazuron

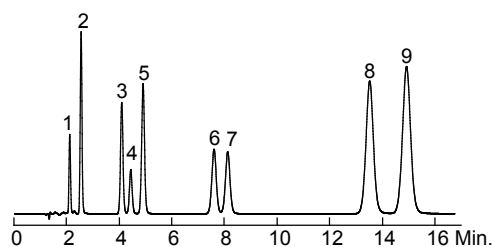
t / min.	0	5	15	30	32	40
A / %	75	75	80	95	75	75
B / %	25	25	20	5	25	25



AN: I1115

Caffeine Metabolites

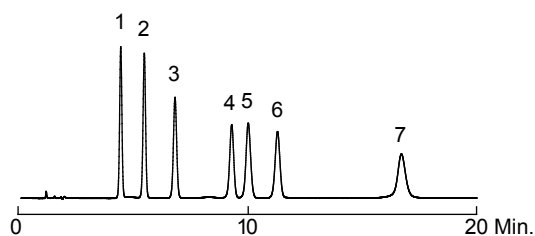
Column: Inspire™ 5 μm C18, 150 x 4.6 mm
 Cat. No.: **81001**
 Mobile Phase: MeOH:1% CH₃COOH in H₂O = 10:90
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 254 nm
 Sample: 1. Uric acid
 2. Xanthine
 3. 7-Methylxanthine
 4. 1-Methyluric acid
 5. 3-Methylxanthine
 6. 1,3-Dimethyluric acid
 7. Theobromine
 8. 1,7-Dimethylxanthine
 9. Theophylline



AN: I1123

Catechols and Resorcinols

Column: Spursil™ 5 μm C18-EP, 150 x 4.6 mm
 Cat. No.: **82101**
 Mobile Phase: MeCN:0.1% HCOOH in H₂O = 25:75
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 270 nm
 Sample: 1. Resorcinol
 2. Catechol
 3. 2-Methylresorcinol
 4. 4-Methylcatechol
 5. 2,5-Dimethylresorcinol
 6. 3-Methylcatechol
 7. 4-Nitrocatechol

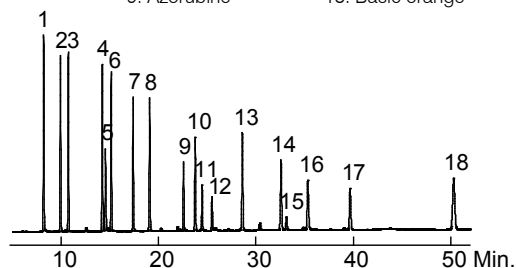


AN: S1158

Colorants

Column: Inspire™ 5 μm C18, 250 x 4.6 mm
 Cat. No.: **81006**
 Mobile Phase A: MeCN
 Mobile Phase B: 0.05 M CH₃COONH₄
 Flow Rate: 1.0 mL/min
 Temperature: 35 °C
 Detection: UV 254 nm
 Sample: 1. Tartrazine 10. Lissamine green B
 2. Amaranth 11. Brilliant blue
 3. Indigotin 12. Acid orange I
 4. Carmine 13. Erythrosine
 5. Brilliant black 14. Acid orange II
 6. Sunset yellow 15. Patent blue V
 7. Fancy red 16. Auramine
 8. Acid red 2G 17. Acid yellow 36
 9. Azorubine 18. Basic orange

t / min.	0	20	50	52	60
A / %	5	30	50	5	5
B / %	95	70	50	95	95

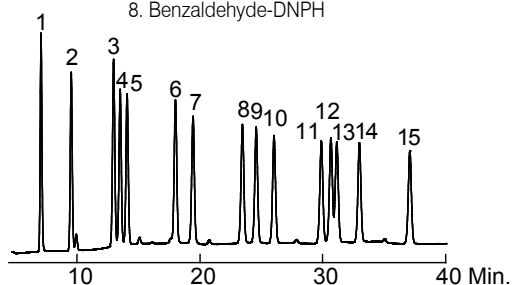


AN: I1117

Derivatized Carbonyl Compounds

Column: Inspire™ 5 μm C18, 250 x 4.6 mm
 Cat. No.: **81006**
 Mobile Phase A: MeOH
 Mobile Phase B: H₂O
 Flow Rate: 1.0 mL/min
 Temperature: 35 °C
 Detection: UV 360 nm
 Injection Volume: 20 μL
 Sample: 1. Formaldehyde-DNPH 9. Isovaleraldehyde-DNPH
 2. Acetaldehyde-DNPH 10. Valeraldehyde-DNPH
 3. Acrolein-DNPH 11. *o*-Tolualdehyde-DNPH
 4. Acetone-DNPH 12. *m*-Tolualdehyde-DNPH
 5. Propionaldehyde-DNPH 13. *p*-Tolualdehyde-DNPH
 6. Crotonaldehyde-DNPH 14. 2,5-Dimethylbenzaldehyde-DNPH
 7. Butyraldehyde-DNPH 15. Hexaldehyde-DNPH
 8. Benzaldehyde-DNPH

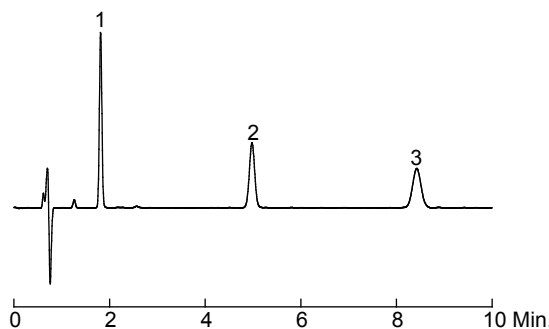
t / min.	0	35	40	41	50
A / %	70	80	80	70	70
B / %	30	20	20	30	30



AN: I1118

Herbicides

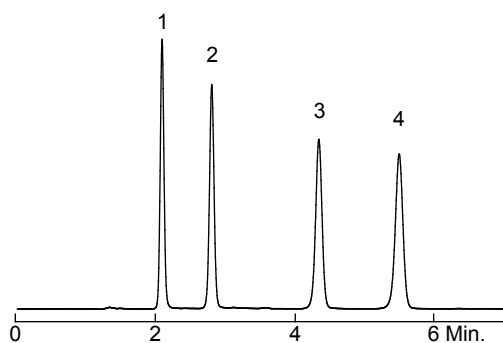
Column: Inspire™ 5 μm C18, 150 x 4.6 mm
 Cat. No.: **81001**
 Mobile Phase: 0.1% TFA in MeCN:0.1% TFA in H₂O = 40:60
 Flow Rate: 2.0 mL/min
 Temperature: Ambient
 Detection: UV 214 nm
 Sample: 1. Dalapon
 2. 2,4-D
 3. 2,4,5-T



AN: I1119

Herbicides

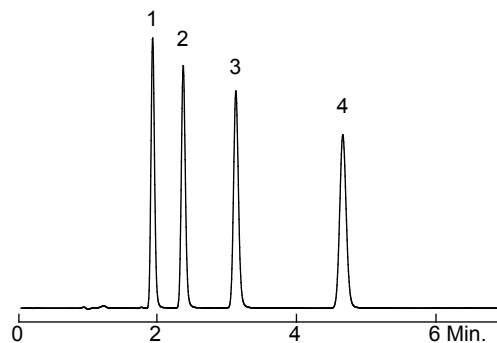
Column: Spursil™ 5 μm C18-EP, 150 x 4.6 mm
 Cat. No.: **82101**
 Mobile Phase: MeCN:H₂O = 60:40
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 214 nm
 Sample: 1. Fenuron
 2. Monuron
 3. Diuron
 4. Linuron



AN: S1159

Herbicides

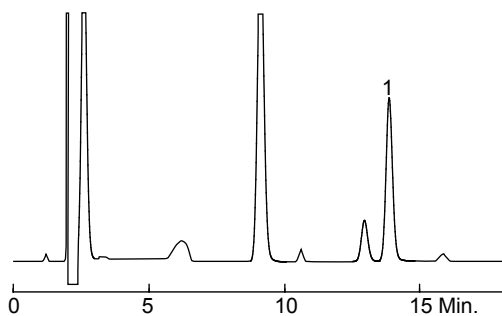
Column: Spursil™ 5 μm C18, 150 x 4.6 mm
 Cat. No.: **82001**
 Mobile Phase: MeCN:H₂O = 60:40
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 214 nm
 Sample: 1. Fenuron
 2. Monuron
 3. Diuron
 4. Linuron



AN: S1160

Melamine

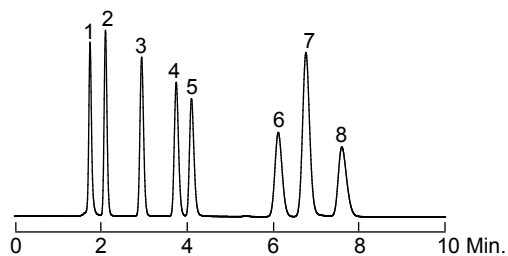
Column: Inspire™ 5 μm C18, 250 x 4.6 mm
 Cat. No.: **81006**
 Mobile Phase: MeCN:Buffer = 8:92
 Flow Rate: 1.0 mL/min
 Temperature: 30 °C
 Detection: UV 214 nm
 Sample: 1. Melamine



AN: I1110

Organic Acids

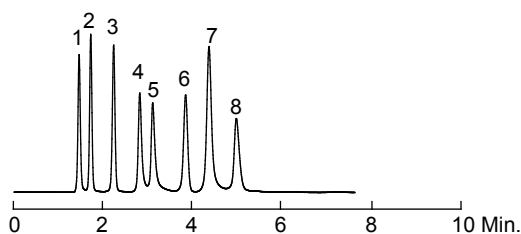
Column: Inspire™ 5 μm C18, 150 x 4.6 mm
 Cat. No.: **81001**
 Mobile Phase: 25 mM KH₂PO₄, pH 2.5
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 210 nm
 Sample: 1. Oxalic acid
 2. Tartaric acid
 3. Malic acid
 4. Lactic acid
 5. Acetic acid
 6. Citric acid
 7. Fumaric acid
 8. Succinic acid



AN: I1112

Organic Acids

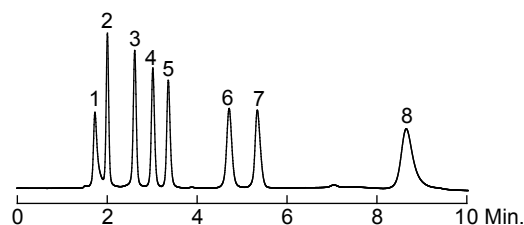
Column: Spursil™ 5 μm C18, 150 x 4.6 mm
 Cat. No.: **82001**
 Mobile Phase: 25 mM KH₂PO₄, pH 2.5
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 210 nm
 Sample: 1. Oxalic acid
 2. Tartaric acid
 3. Malic acid
 4. Lactic acid
 5. Acetic acid
 6. Citric acid
 7. Fumaric acid
 8. Succinic acid



AN: S1161

Organic Acids

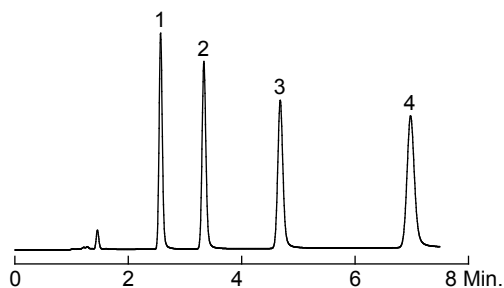
Column: Spursil™ 5 μm C18-EP, 150 x 4.6 mm
 Cat. No.: **82101**
 Mobile Phase: 25 mM KH₂PO₄, pH 2.5
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 210 nm
 Sample: 1. Oxalic acid
 2. Tartaric acid
 3. Malic acid
 4. Lactic acid
 5. Acetic acid
 6. Citric acid
 7. Succinic acid
 8. Fumaric acid



AN: S1162

Parabens

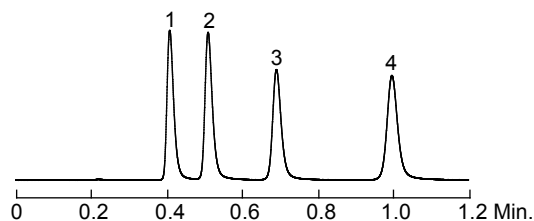
Column: Inspire™ 5 μm C18, 150 x 4.6 mm
 Cat. No.: **81001**
 Mobile Phase: MeCN:20 mM K₂HPO₄ (pH 7) = 50:50
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 254 nm
 Sample: 1. Methyl paraben
 2. Ethyl paraben
 3. Propyl paraben
 4. Butyl paraben



AN: I1113

Parabens

Column: Endeavorsil™ 1.8 μm C18, 50 x 2.1 mm
 Cat. No.: **87002**
 Mobile Phase: MeCN:20 mM K₂HPO₄ (pH 7) = 50:50
 Flow Rate: 0.5 mL/min
 Temperature: 30 °C
 Detection: UV 254 nm
 Sample: 1. Methyl paraben
 2. Ethyl paraben
 3. Propyl paraben
 4. Butyl paraben

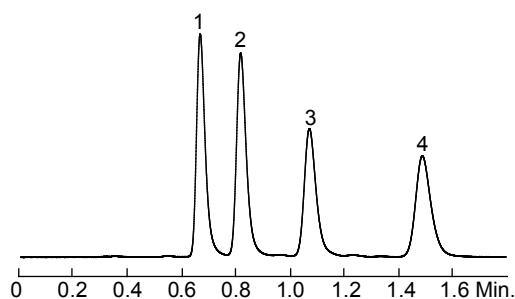


AN: E1110

Applications

Parabens

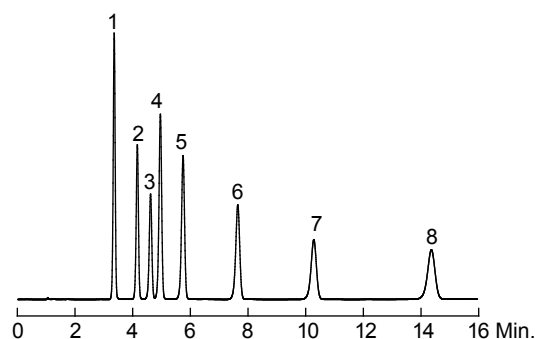
Column: Leapsil™ 2.7 μm C18, 50 x 2.1 mm
 Cat. No.: **86004**
 Mobile Phase: MeCN:20 mM K₂HPO₄ (pH 7) = 55:45
 Flow Rate: 0.3 mL/min
 Temperature: 30 °C
 Detection: UV 254 nm
 Sample: 1. Methyl paraben
 2. Ethyl paraben
 3. Propyl paraben
 4. Butyl paraben



AN: L1108

Phenols

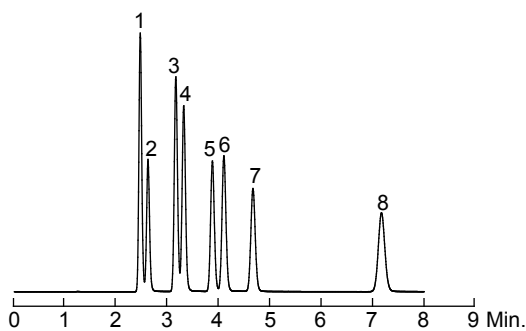
Column: Spursil™ 5 μm C18-EP, 150 x 4.6 mm
 Cat. No.: **82101**
 Mobile Phase: 0.1% HCOOH in MeCN:0.1% HCOOH in H₂O = 55:45
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 280 nm
 Sample: 1. Phenol
 2. 2-Nitrophenol
 3. 4-Nitrophenol
 4. 2-Chlorophenol
 5. 4-Chlorophenol
 6. 4-Chloro-3-methylphenol
 7. 2,4-Dichlorophenol
 8. 2,4,6-Trichlorophenol



AN: S1163

Phenols

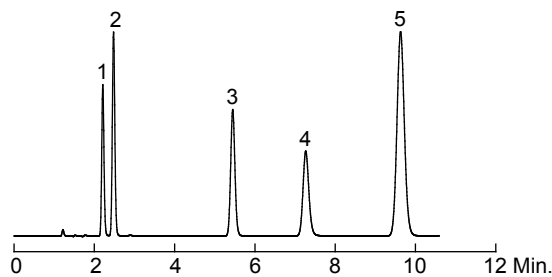
Column: Spursil™ 5 μm C18, 150 x 4.6 mm
 Cat. No.: **82001**
 Mobile Phase: 0.1% HCOOH in MeCN:0.1% HCOOH in H₂O = 55:45
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 280 nm
 Sample: 1. Phenol
 2. 4-Nitrophenol
 3. 2-Chlorophenol
 4. 4-Chlorophenol
 5. 2-Nitrophenol
 6. 4-Chloro-3-methylphenol
 7. 2,4-Dichlorophenol
 8. 2,4,6-Trichlorophenol



AN: I1101

Polar Acids

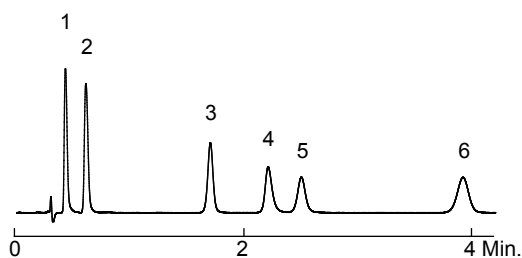
Column: Inspire™ 5 μm C18, 150 x 4.6 mm
 Cat. No.: **81001**
 Mobile Phase: 0.1% HCOOH in MeCN:0.1% HCOOH in H₂O = 30:70
 Flow Rate: 0.3 mL/min
 Detection: UV 254 nm
 Sample: 1. *p*-Aminobenzoic acid
 2. Homovanillic acid
 3. Sorbic acid
 4. *p*-Nitrobenzoic acid
 5. *p*-Toluic acid



AN: I1125

Polar Acids

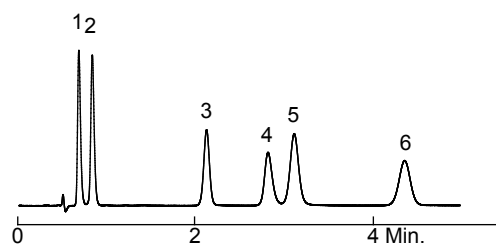
Column: Endeavorsil™ 1.8 μm C18, 50 x 2.1 mm
 Cat. No.: **87002**
 Mobile Phase: 0.1% HCOOH in MeCN:0.1% HCOOH in H₂O = 20:80
 Flow Rate: 0.5 mL/min
 Temperature: 30 °C
 Detection: UV 254 nm
 Sample: 1. *p*-Aminobenzoic acid
 2. Homovanillic acid
 3. Sorbic acid
 4. Salicylic acid
 5. *p*-Chlorobenzoic acid
 6. *p*-Nitrobenzoic acid



AN: E1111

Polar Acids

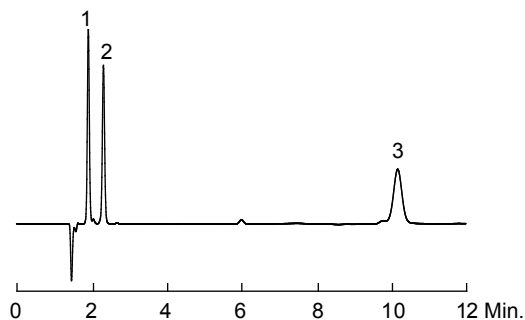
Column: Leapsil™ 2.7 μm C18, 50 x 2.1 mm
 Cat. No.: **86004**
 Mobile Phase: 0.1% HCOOH in MeCN:0.1% HCOOH in H₂O = 25:75
 Flow Rate: 0.3 mL/min
 Detection: UV 254 nm
 Sample: 1. *p*-Aminobenzoic acid
 2. Homovanillic acid
 3. Sorbic acid
 4. Salicylic acid
 5. *p*-Nitrobenzoic acid
 6. *p*-Toluic acid



AN: L1109

Sweeteners

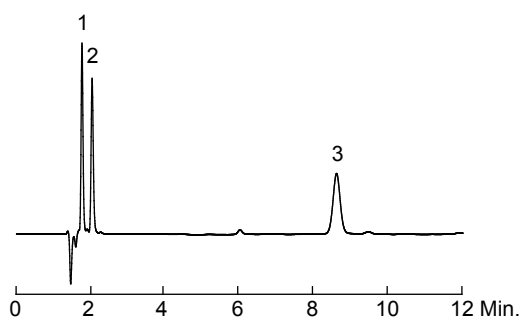
Column: Inspire™ 5 μm C18, 150 x 4.6 mm
 Cat. No.: **81001**
 Mobile Phase: MeOH:20 mM CH₃COONH₄ (pH 5) = 30:70
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 210 nm
 Sample: 1. Acesulfame K
 2. Sodium saccharin
 3. Aspartame



AN: I1120

Sweeteners

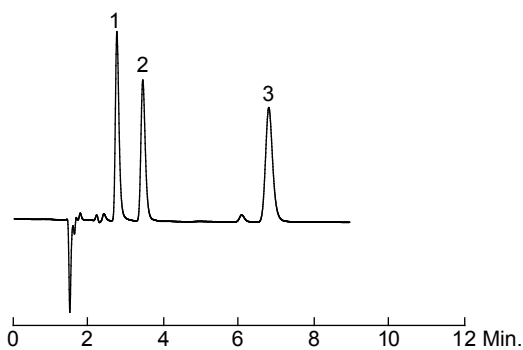
Column: Spursil™ 5 μm C18, 150 x 4.6 mm
 Cat. No.: **82001**
 Mobile Phase: MeOH:20 mM CH₃COONH₄ (pH 5) = 30:70
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 210 nm
 Sample: 1. Acesulfame K
 2. Sodium saccharin
 3. Aspartame



AN: S1164

Sweeteners

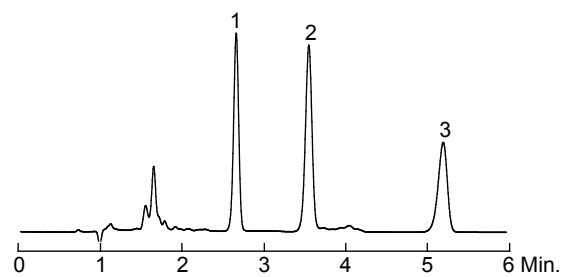
Column: Spursil™ 5 μm C18-EP, 150 x 4.6 mm
Cat. No.: **82101**
Mobile Phase: MeOH:20 mM CH₃COONH₄ (pH 5) = 30:70
Flow Rate: 1.0 mL/min
Temperature: Ambient
Detection: UV 210 nm
Sample: 1. Acesulfame K
2. Sodium saccharin
3. Aspartame



AN: S1165

Unsaturated Fatty Acids

Column: Inspire™ 5 μm C18, 150 x 4.6 mm
Cat. No.: **81001**
Mobile Phase: 0.1% TFA in MeCN:0.1% TFA in H₂O = 95:5
Flow Rate: 1.5 mL/min
Temperature: Ambient
Detection: UV 214 nm
Sample: 1. Linolenic acid
2. Linoleic acid
3. Oleic acid

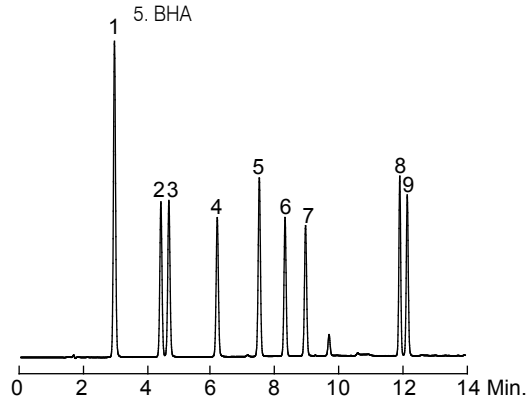


AN: I1121

Antioxidants

Column: Inspire™ 5 μm C18, 150 x 4.6 mm
 Cat. No.: **81001**
 Mobile Phase A: 5% CH₃COOH in H₂O
 Mobile Phase B: MeCN:MeOH = 50:50
 Flow Rate: 1.0 mL/min
 Temperature: Ambient
 Detection: UV 280 nm
 Sample: 1. Propyl gallate 6. Ionox 100
 2. TBHQ 7. Octyl gallate
 3. THBP 8. BHT
 4. NDGA 9. Lauryl gallate
 5. BHA

t / min.	0	10
A / %	50	0
B / %	50	100

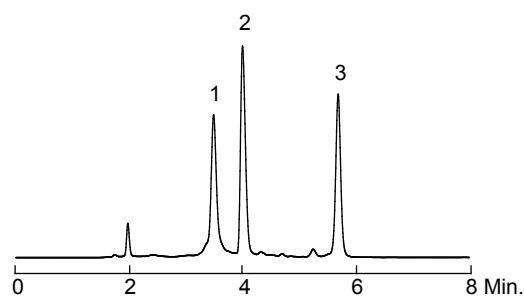


AN: I1122

Proteins

Column: Bio-Bond™ 5 μm C18, 150 x 4.6 mm
 Cat. No.: **84001**
 Mobile Phase A: 0.1% TFA in H₂O
 Mobile Phase B: 0.1% TFA in MeCN
 Flow Rate: 1.0 mL/min
 Detection: UV 280 nm
 Sample: 1. Cytochrome C
 2. Insulin
 3. Lysozymes

t / min.	0	10
A / %	70	50
B / %	30	50

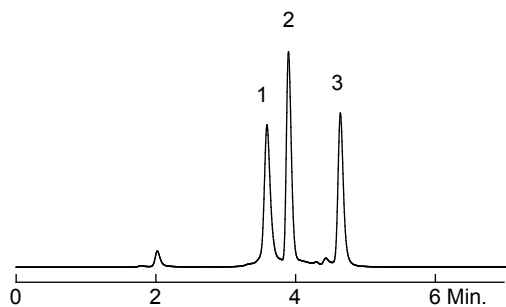


AN: B1101

Proteins

Column: Bio-Bond™ 5 μm C18-EP, 150 x 4.6 mm
 Mobile Phase A: 0.1% TFA in H₂O
 Mobile Phase B: 0.1% TFA in MeCN
 Flow Rate: 1.0 mL/min
 Detection: UV 280 nm
 Sample: 1. Cytochrome C
 2. Insulin
 3. Lysozymes

t / min.	0	5
A / %	70	50
B / %	30	50



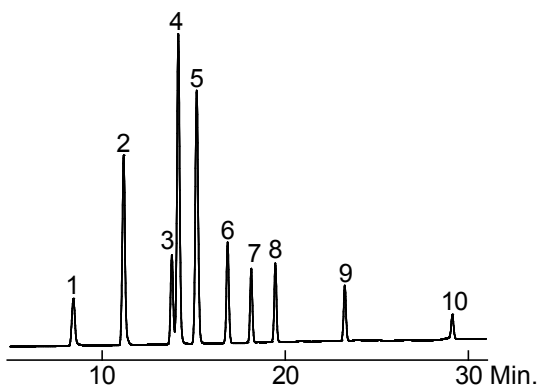
AN: B1102

Applications

Others

Phenols

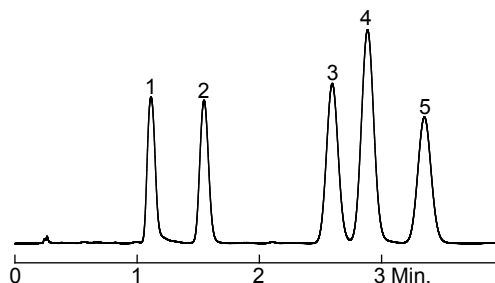
Column: Spursil™ 5 µm C18-EP, 150 x 4.6 mm
Cat. No.: **82101**
Mobile Phase: MeCN:0.1% HCOOH in H₂O = 25:75
Flow Rate: 1.0 mL/min
Temperature: Ambient
Detection: UV 270 nm
Sample: 1. Phenol 6. 2,4-Dimethylphenol
2. 4-Nitrophenol 7. 4-Chloro-3-methylphenol
3. 2-Chlorophenol 8. 2,4-Dichlorophenol
4. 2,4-Dinitrophenol 9. 2,4,6-Trichlorophenol
5. 2-Nitrophenol 10. Pentachlorophenol



AN: S1166

Steroids

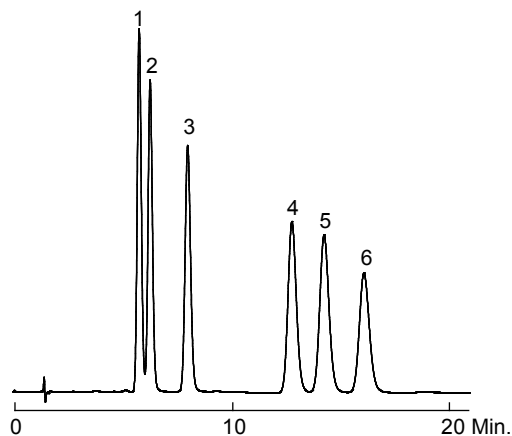
Column: Endeavorsil™ 1.8 µm C18, 50 x 2.1 mm
Cat. No.: **87002**
Mobile Phase: MeOH:H₂O = 50:50
Flow Rate: 0.5 mL/min
Temperature: 30 °C
Detection: UV 254 nm
Sample: 1. Prednisone
2. Prednisolone
3. Dexamethasone
4. Hydrocortisone 21-acetate
5. 11-α-Hydroxyprogesterone



AN: E1112

Steroids

Column: Inspire™ 5 µm C18, 150 x 4.6 mm
Cat. No.: **81001**
Mobile Phase: MeOH:H₂O = 55:45
Flow Rate: 1.0 mL/min
Temperature: Ambient
Detection: UV 254 nm
Sample: 1. Prednisone 4. Dexamethasone
2. Cortisone 5. Hydrocortisone 21-acetate
3. Prednisolone 6. 11-α-Hydroxyprogesterone



AN: I1123

Industry Index

Environmental.....	154
Petrochemicals.....	168
Chemicals	183
Solvents.....	192
Food	200
Pharmaceutical	208

Product Index

DM-1 / DM-1MS

Air Sample: TO-14.....	154
Citronella Java Oil	205
Fatty Acids (Free)	200
Flavor Volatiles	203
Fragrance	206
Gasoline Aromatics.....	180
Hydrocarbons, C7 - C42.....	179
Oxygenates MTBE	175
Petroleum Oxygenates.....	175
Solvents Mixture #1	193
Solvents Mixture #2	195
Solvents Mixture #3	197
Sulfide.....	176
Sulfur in Gasoline	176
Sulfur in Naphtha.....	176
USP Solvents.....	192

DM-5 / DM-5MS

Alcohols.....	187
Basic Drugs.....	208
Benzidines / Phenols (EPA 604 / 605).....	161
Butyl Tins	165
Chlorinated Hydrocarbons (EPA 612).....	160
Food Packaging Volatiles.....	206
Glycols / Alcohols.....	187
Nitrogen-Containing Herbicides	163
Organochlorine Pesticides	162
Organochlorine Pesticides (EPA 8081).....	164
PAHs (EPA 610).....	157
PAEs	167
Solvents.....	199
Steroids, Anabolic	210

DM-5 Amine

Amines / Phenols	185
Antihistamines	210
Ethylenediamines.....	184
Sympathomimetic Amines Drugs	209

DM-5MS / LB

PAHs (EPA 610).....	156
Phenols (EPA 528).....	158
Semi-volatile Organic Compounds.....	159
Volatile Organic Compounds (EPA 526).....	158

DM-17

BHA / BHT	206
Chlorophenoxyacid Herbicides (EPA 515.1).....	165
Organochlorine Pesticides (EPA 8081).....	164
PAEs (EPA 8060).....	160
Phenols (EPA 604).....	161
Triazine Herbicides (EPA 619)	165

DM-1701

Acrylic Esters.....	191
Formaldehyde	189

GC Applications Index

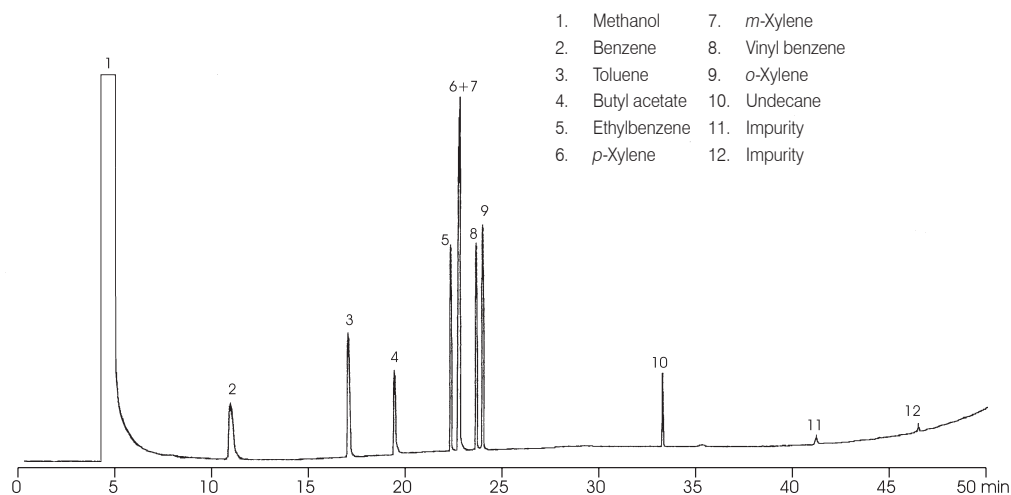
Fragrance	206
Organochlorine Pesticides (EPA 8081)	164
Styrene Impurities.....	191
DM-35	
Acidic / Neutral Drugs	209
Basic Drugs.....	208
Chlorinated Hydrocarbons (EPA 612)	160
Chlorophenoxyacid Herbicides (EPA 615).....	165
Endocrine Disruptors Butyl Tins (Hexyl Derivatives)	167
Nitrogen-Containing Herbicides	163
Organochlorine Pesticides (EPA 8081)	164
Organophosphorus Pesticides (EPA 8140 / 8141 / 8141A).....	162
DM-35 Amine	
Cold Medicine	210
Ethanolamines.....	184
Primary Amines	183
Sympathomimetic Amines Drugs	209
DM-200	
Aromatics (Benzene / Toluene / Xylene)	181
Basic Drugs.....	208
Chlorinated Hydrocarbons (EPA 612)	160
Explosives	167
Glycols.....	187
Nitroamines	161
PAHs (EPA 610).....	157
Silanes.....	191
Solvents Mixture #1	194
Solvents Mixture #2	196
Solvents Mixture #3.....	198
USP Solvents.....	192
Volatile Organic Compounds in Water (EPA 551.1)	166
DM-225	
Neutral Sterols.....	207
Sugars (Alditol Acetates).....	207
DM-624 / DM-624MS	
EP Class 1 and Class 2 Solvents	211
Organic Volatile Impurities	211
Organic Volatile Impurities (USP 467)	211
Primary, Second and Tertiary Amines	212
Residual Solvents.....	212
Volatile Organic Compounds (EPA 524.2)	155
DM-2330	
Dioxins.....	155
PUFA (Animal Source)	201
Sugars (Alditol Acetates).....	207
DM-2887	
Simulated Distillation	178
DM-2560	
FAMEs (<i>cis</i> / <i>trans</i> Isomers)	200
DM-Wax	
Alcohols.....	186
Alcohols / Aldehydes.....	188
Aldehydes	189
Amines / Alcohols / Chlorides.....	185
Aromatics	181, 182
Concentrated Liquors	204
Esters	190
Flavor Volatiles	203
Glycols.....	187
Ketones	189
Peppermint Oil.....	205
Petroleum Oxygenates.....	174
PUFA (Animal Source)	201

Solvents Mixture #1	194
Solvents Mixture #2	196
Solvents Mixture #3	198
Styrene Impurities.....	191
DM-Wax Amine	
Amines (Low MW)	183
Hexamethylenediamine.....	184
Nitrosamines	185
Primary Amines (Low MW)	183
DM-InertWax	
Aldehydes	188
FAMEs	201
DM-HT SimDist Metal	
Bleed Profile	177
Hydrocarbons, C10 - C44	178
Hydrocarbons, C30 - C110	178
Hydrocarbons, C44 - C100	177
DM-FFAP	
Alcoholic Standard: Acids and Esters	204
Fatty Acids (Free)	200
DM-FAMEWAX	
FAMEs (Black Currant Seed Oil).....	202
FAMEs (Flax Seed Oil)	202
FAMEs (Marine Oil Standard)	202
DM-PLOT Alumina	
1,3-Butadiene Purity.....	172
Hydrocarbons	173
Propylene Purity	171
Refinery Gas.....	172
DM-PLOT Alumina / Na₂SO₄	
Refinery Gas.....	170
DM-PLOT Alumina / KCl	
Butane Lighter Fluid.....	170
DM-PLOT CFC	
Impurity Analysis of 1,1,1,2-Tetrafluoroethane	170
DM-PLOT MS 5A	
Permanent Gases.....	168, 169
DM-PLOT Q	
Alcohols.....	186
Hydrocarbon Gases.....	171, 172, 173
Permanent Gases.....	168, 169
Polar Solvents.....	199
DM-PLOT QS	
Natural Gas #2	170
DM-PLOT S / DM-PLOT U	
Hydrocarbon Gases.....	172
Permanent Gases.....	169
Polar Solvents.....	199
DM-PONA	
Detailed Hydrocarbons Analysis.....	179
DM-TCEP	
Aromatics	181
Petroleum Oxygenates.....	174
DM-Volatile Amine	
Short Chain Amines in Water	183
DM-PAH	
PAHs.....	156
DM-AQUA	
Volatile Organic Compounds in Water.....	166
DM-BDTG Metal	
Glycerin in Biodiesel (ASTM D6584)	177
DM-TVOC	
TVOCs	154

Volatiles

TVOCs

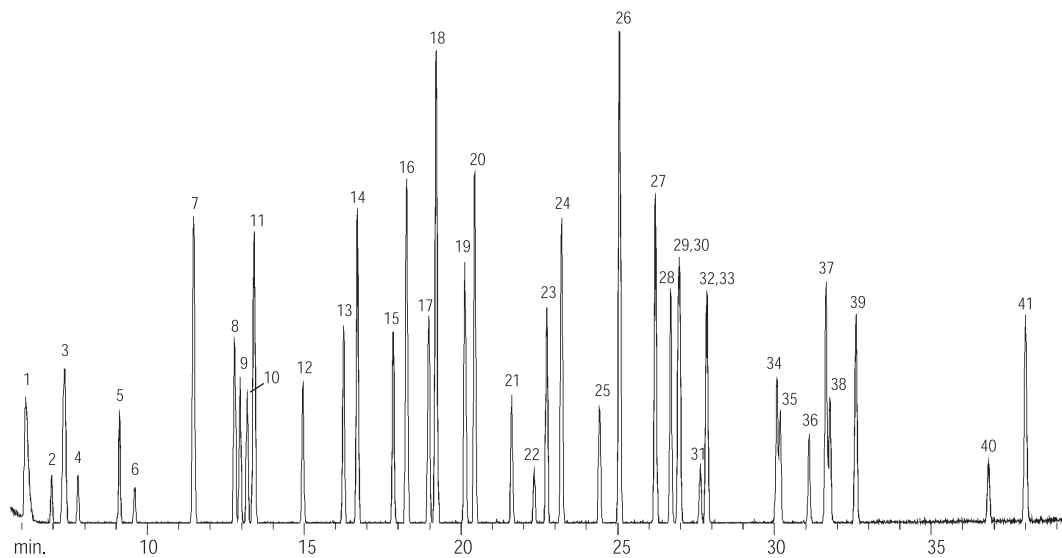
Column: DM-TVOC, 50 m x 0.32 mm x 1.00 μ m
 Cat. No.: 7831
 Index: CEO00010
 Carrier Gas: N₂
 Oven Temp.: 50 °C (hold 10 min) to 250 °C at 5 °C/min
 Injection: Split, 10:1, 250 °C 1 μ L
 Detector: FID, 250 °C



Air Sample: TO-14

Column: DM-1, 60 m x 0.32 mm x 3.00 μ m
 Cat. No.: 7142
 Index: CER00018
 Oven Temp.: 30 °C (hold 4 min) to 250 °C (hold 15 min) at 7 °C/min
 Carrier Gas: He, 21 cm/sec, 30 °C
 Detector: MS, 250 °C
 Ionization: EI
 Scan Range: 34-280 AMU
 Cryotrap Temp.: -160 °C
 Cryotrap Desorb Temp.: 150 °C

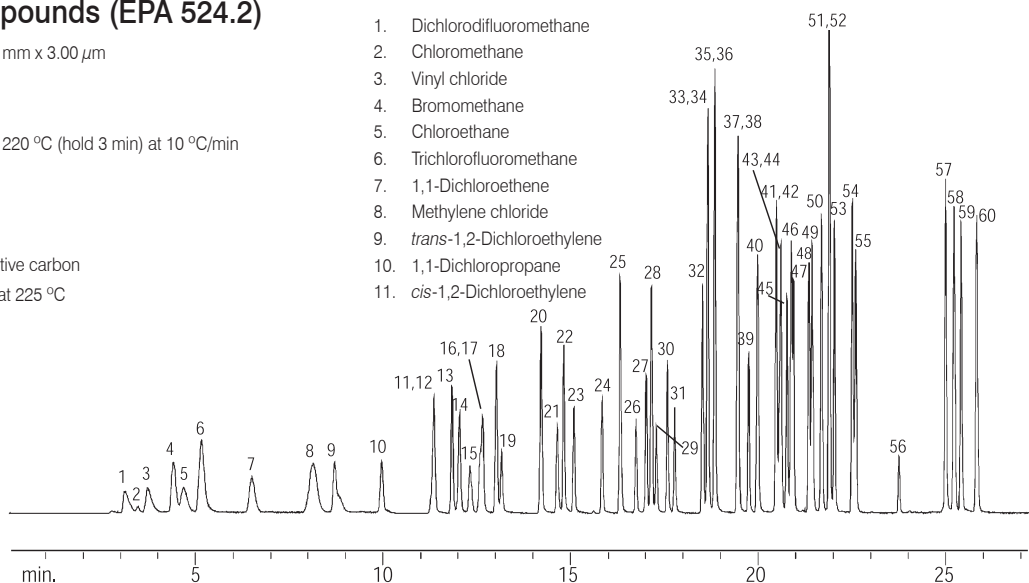
- | | | |
|---|---------------------------------------|-------------------------------|
| 1. Dichlorodifluoromethane | 14. Chloroform | 28. Ethylbenzene |
| 2. Chloromethane | 15. 1,2-Dichloroethane | 29. <i>m</i> -Xylene |
| 3. 1,2-Dichlorotetrafluoroethane | 16. 1,1,1-Trichloroethane | 30. <i>p</i> -Xylene |
| 4. Vinyl chloride | 17. Benzene | 31. Styrene |
| 5. Bromomethane | 18. Carbon tetrachloride | 32. <i>o</i> -Xylene |
| 6. Chloroethane | 19. 1,2-Dichloropropane | 33. 1,1,2,2-Tetrachloroethane |
| 7. Trichlorofluoromethane | 20. Trichloroethylene | 34. 4-Methyltoluene |
| 8. 1,1-Dichloroethene | 21. <i>cis</i> -1,3-Dichloropropene | 35. 1,3,5-Trimethylbenzene |
| 9. Methylene chloride | 22. <i>trans</i> -1,3-Dichloropropene | 36. 1,2,4-Trimethylbenzene |
| 10. 3-Chloropropene | 23. 1,1,2-Trichloroethane | 37. 1,3-Dichlorobenzene |
| 11. 1,1,2-Trichloro-1,2,2-trifluoroethane | 24. Toluene | 38. 1,4-Dichlorobenzene |
| 12. 1,1-Dichloroethane | 25. 1,2-Dibromoethane | 39. 1,2-Dichlorobenzene |
| 13. <i>cis</i> -1,2-Dichloroethene | 26. Tetrachloroethene | 40. 1,2,4-Trichlorobenzene |
| | 27. Chlorobenzene | 41. Hexachlorobutadiene |



Volatile Organic Compounds (EPA 524.2)

Column: DM-624, 75 m x 0.53 mm x 3.00 μ m
 Cat. No.: 7752
 Index: CER00011
 Oven Temp.: 35 $^{\circ}$ C (hold 8 min) to 220 $^{\circ}$ C (hold 3 min) at 10 $^{\circ}$ C/min
 Detector: MS, 250 $^{\circ}$ C
 Scan Range: 45 - 300 AMU
 Purging Time: 11 min
 Sorbent Tube: Tenax / Silica gel / Active carbon
 Desorb Temp.: 220 $^{\circ}$ C (hold 2 min), at 225 $^{\circ}$ C
 Desorb Speed.: 10 mL/min

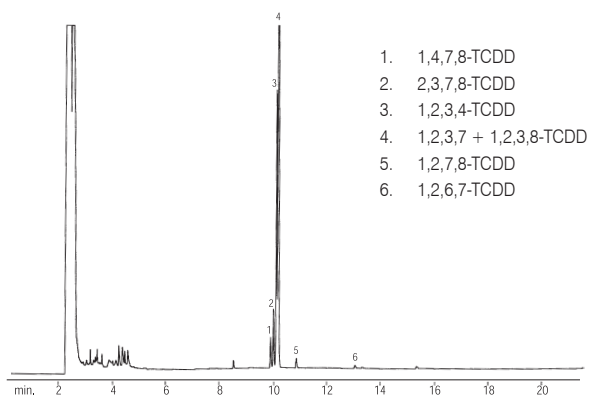
1. Dichlorodifluoromethane
2. Chloromethane
3. Vinyl chloride
4. Bromomethane
5. Chloroethane
6. Trichlorofluoromethane
7. 1,1-Dichloroethene
8. Methylene chloride
9. *trans*-1,2-Dichloroethylene
10. 1,1-Dichloropropane
11. *cis*-1,2-Dichloroethylene



- | | | | | |
|---------------------------|---------------------------------------|-------------------------------|---------------------------------|---------------------------------|
| 12. 2,2-Dichloropropane | 23. Bromodichloromethane | 34. Ethylbenzene | 45. 2-Chlorotoluene | 55. 1,2-Dichlorobenzene |
| 13. Chlorobromomethane | 24. <i>cis</i> -1,3-Dichloropropene | 35. <i>m</i> -Xylene | 46. 1,3,5-Trimethylbenzene | 56. 1,2-Dibromo-3-chloropropane |
| 14. Chloroform | 25. Toluene | 36. <i>p</i> -Xylene | 47. 4-Chlorotoluene | 57. 1,2,4-Trichlorobenzene |
| 15. 1,1,1-Trichloroethane | 26. <i>trans</i> -1,3-Dichloropropene | 37. <i>o</i> -Xylene | 48. <i>tert</i> -Butylbenzene | 58. Hexachlorobutadiene |
| 16. Tetrachloromethane | 27. 1,1,2-Trichloroethane | 38. Styrol | 49. 1,2,4-Trimethylbenzene | 59. Naphthalene |
| 17. 1,1-Dichloropropene | 28. Tetrachloroethylene | 39. Bromoform | 50. <i>sec</i> -Butylbenzene | 60. 1,2,3-Trichlorobenzene |
| 18. Benzene | 29. 1,3-Dichloropropane | 40. Anisoxide | 51. 1,3-Dichlorobenzene | |
| 19. 1,2-Dichloroethane | 30. Dibromochloromethane | 41. Bromobenzene | 52. <i>p</i> -Isopropyl toluene | |
| 20. Trichloroethylene | 31. 1,2-Dibromoethane | 42. 1,1,2,2-Tetrachloroethane | 53. 1,4-Dichlorobenzene | |
| 21. 1,2-Dichloropropane | 32. Chlorobenzene | 43. 1,2,3-Trichloropropane | 54. <i>n</i> -Butylbenzene | |
| 22. Dibromomethane | 33. 1,1,1,2-Tetrachloroethane | 44. Propylbenzene | | |

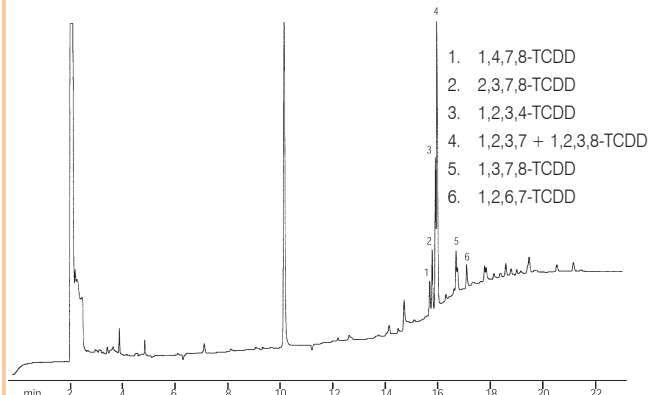
Dioxins

Column: DM-2330, 60 m x 0.25 mm x 0.20.00 μ m
 Cat. No.: 8624
 Index: CER00108
 Oven Temp.: 200 $^{\circ}$ C (hold 1 min) to 250 $^{\circ}$ C (hold 15 min) at 8 $^{\circ}$ C/min,
 to 275 $^{\circ}$ C (hold 5 min) at 15 $^{\circ}$ C/min
 Carrier Gas: H₂, 40 cm/sec
 Injection: Splitless, 275 $^{\circ}$ C
 Sample: TCDD isomers, 2.0 μ L
 Detector: ECD, 21 kHz full scale, 275 $^{\circ}$ C



Dioxins

Column: DM-2330, 60 m x 0.32 mm x 0.20.00 μ m
 Cat. No.: 8634
 Index: CER00109
 Oven Temp.: 200 $^{\circ}$ C (hold 1 min) to 240 $^{\circ}$ C (hold 6 min) at 3 $^{\circ}$ C/min,
 to 275 $^{\circ}$ C (hold 30 min) at 15 $^{\circ}$ C/min
 Carrier Gas: H₂, 40 cm/sec
 Injection: Cold on-column, 275 $^{\circ}$ C
 Sample: TCDD isomers, 1.5 μ L
 Detector: ECD, 5 kHz full scale, 275 $^{\circ}$ C

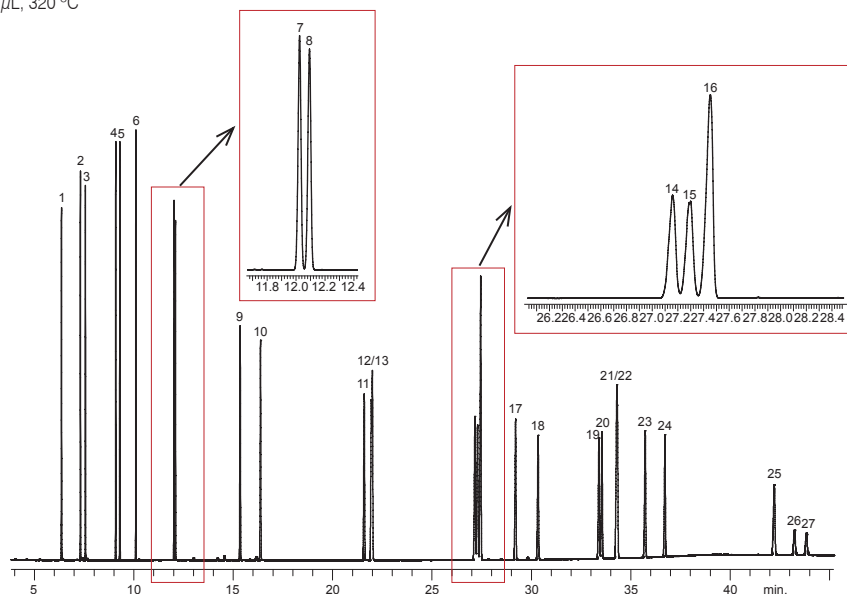


Semi-volatiles

PAHs

Column: DM-PAH, 30 m x 0.25 mm x 0.25 μ m
 Cat. No.: **8862**
 Index: CER1160
 Sample: EPA 8310 PAHs in dichloromethane solution, 10 ppm
 Oven Temp.: 65 $^{\circ}$ C (hold 0.5 min) to 220 $^{\circ}$ C at 15 $^{\circ}$ C/min,
 to 330 $^{\circ}$ C (hold 15 min) at 4 $^{\circ}$ C/min
 Carrier Gas: He, 2.0 mL/min
 Injection: Splitless (hold 1.75 min), 0.5 μ L, 320 $^{\circ}$ C
 Makeup Gas: 75 mL/min
 Detector: FID, 320 $^{\circ}$ C

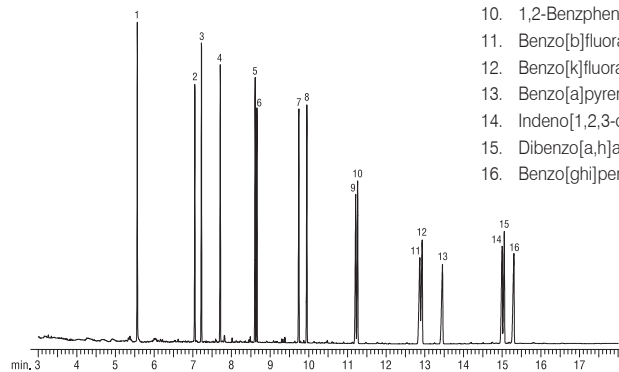
- | | | |
|------------------------|--------------------------|------------------------------|
| 1. Naphthalene | 10. Pyrene | 19. Dibenzo[a,h]acridine |
| 2. 2-Methylnaphthalene | 11. Benzo[a]anthracene | 20. Dibenzo[a,j]acridine |
| 3. 1-Methylnaphthalene | 12. Chrysene | 21. Indeno[1,2,3-cd]pyrene |
| 4. Acenaphthylene | 13. Triphenylene | 22. Dibenzo[a,h]anthracene |
| 5. Acenaphthene | 14. Benzo[b]fluoranthene | 23. Benzo[ghi]perylene |
| 6. Fluorene | 15. Benzo[k]fluoranthene | 24. 7H-Dibenzo[c,g]carbazole |
| 7. Phenanthrene | 16. Benzo[j]fluoranthene | 25. Dibenzo[a,e]pyrene |
| 8. Anthracene | 17. Benzo[a]pyrene | 26. Dibenzo[a,i]pyrene |
| 9. Fluoranthene | 18. 3-Methylcholanthrene | 27. Dibenzo[a,h]pyrene |



PAHs (EPA 610)

Column: DM-5 MS / LB, 30 m x 0.25 mm x 0.25 μ m
 Cat. No.: **8721**
 Index: CER00595
 Oven Temp.: 40 $^{\circ}$ C (hold 2 min) to 250 $^{\circ}$ C at 25 $^{\circ}$ C/min
 to 265 $^{\circ}$ C at 5 $^{\circ}$ C/min, to 300 $^{\circ}$ C (hold 4 min) at 25 $^{\circ}$ C/min
 Carrier Gas: H₂, 4 mL/min constant flow
 Injection: Splitless hold 2 min, 330 $^{\circ}$ C
 2 mm splitless inlet liner w / wool
 Sample: PAHs standard, 1.0 μ L, 50 μ g/mL
 Detector: FID, 350 $^{\circ}$ C

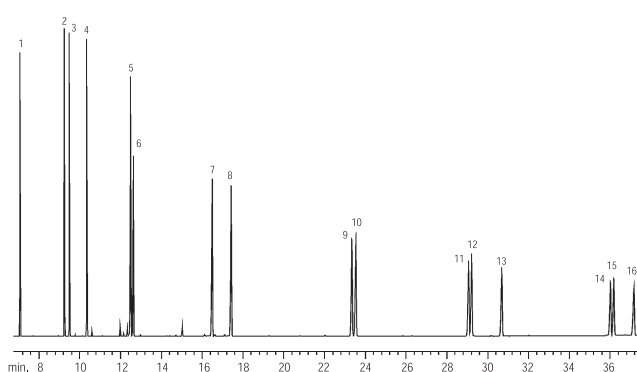
- Naphthalene
- Acenaphthylene
- Acenaphthene
- Fluorene
- Phenanthrene
- Anthracene
- Fluoranthene
- Pyrene
- Benzo[a]anthracene
- 1,2-Benzphenanthrene
- Benzo[b]fluoranthene
- Benzo[k]fluoranthene
- Benzo[a]pyrene
- Indeno[1,2,3-cd]pyrene
- Dibenzo[a,h]anthracene
- Benzo[ghi]perylene



V.S.

PAHs (EPA 610)

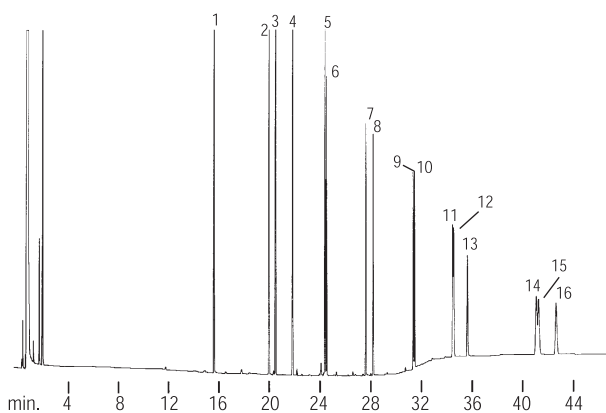
Column: DM-5 MS / LB, 30 m x 0.25 mm x 0.50 μ m
 Cat. No.: **8723**
 Index: CER00549
 Oven Temp.: 40 $^{\circ}$ C (hold 1 min) to 200 $^{\circ}$ C at 20 $^{\circ}$ C/min
 to 310 $^{\circ}$ C (hold 5 min) at 4 $^{\circ}$ C/min
 Carrier Gas: H₂, 40 cm/sec
 Injection: Splitless hold 1 min, 300 $^{\circ}$ C
 Sample: PAHs standard, 1.0 μ L, 20 ng/ μ L
 Detector: FID, 310 $^{\circ}$ C



PAHs (EPA 610)

Column: DM-5, 30 m x 0.53 mm x 1.50 μ m
 Cat. No.: 7251
 Index: CER00043
 Oven Temp.: 4 °C (hold 6 min) to 300 °C (hold 15 min) at 10 °C/min
 Carrier Gas: H₂, 80 cm/sec
 Injection: Direct, 300 °C
 Sample: PAHs standard, 2.5 μ L
 Detector: FID, 8 x 10⁻¹¹ AFS, 300 °C

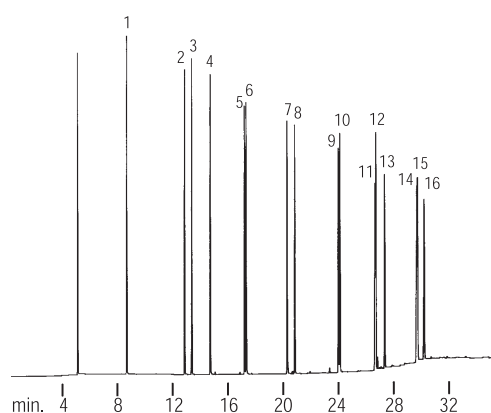
- | | |
|-------------------|----------------------------|
| 1. Naphthalene | 9. Benzo[a]anthracene |
| 2. Acenaphthylene | 10. 1,2-Benzphenanthrene |
| 3. Acenaphthene | 11. Benzo[b]fluoranthene |
| 4. Fluorene | 12. Benzo[k]fluoranthene |
| 5. Phenanthrene | 13. Benzo[a]pyrene |
| 6. Anthracene | 14. Indeno[1,2,3-cd]pyrene |
| 7. Fluoranthene | 15. Dibenzo[a,h]anthracene |
| 8. Pyrene | 16. Benzo[ghi]perylene |



PAHs (EPA 610)

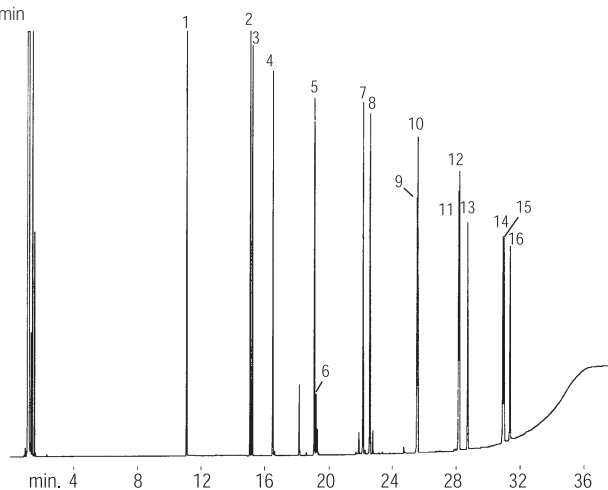
Column: DM-5, 30 m x 0.32 mm x 0.25 μ m
 Cat. No.: 7231
 Index: CER00376
 Oven Temp.: 35 °C (hold 4 min) to 325 °C at 10 °C/min
 Carrier Gas: H₂, 40 cm/sec
 Injection: Direct, cold on-column
 Sample: PAHs standard, 0.5 μ L
 Detector: FID, 8 x 10⁻¹¹ AFS, 325 °C

- | | |
|-------------------|----------------------------|
| 1. Naphthalene | 9. Benzo[a]anthracene |
| 2. Acenaphthylene | 10. 1,2-Benzphenanthrene |
| 3. Acenaphthene | 11. Benzo[b]fluoranthene |
| 4. Fluorene | 12. Benzo[k]fluoranthene |
| 5. Phenanthrene | 13. Benzo[a]pyrene |
| 6. Anthracene | 14. Indeno[1,2,3-cd]pyrene |
| 7. Fluoranthene | 15. Dibenzo[a,h]anthracene |
| 8. Pyrene | 16. Benzo[ghi]perylene |



PAHs (EPA 610)

Column: DM-200, 30 m x 0.25 mm x 0.25 μ m
 Cat. No.: 8321
 Index: CER00044
 Oven Temp.: 40 °C (hold 4 min) to 340 °C at 10 °C/min
 Carrier Gas: H₂, 40 cm/sec
 Injection: Split, 40:1, 340 °C
 Sample: PAHs standard, 1.2 μ L
 Detector: FID, 16 x 10⁻¹¹ AFS, 340 °C

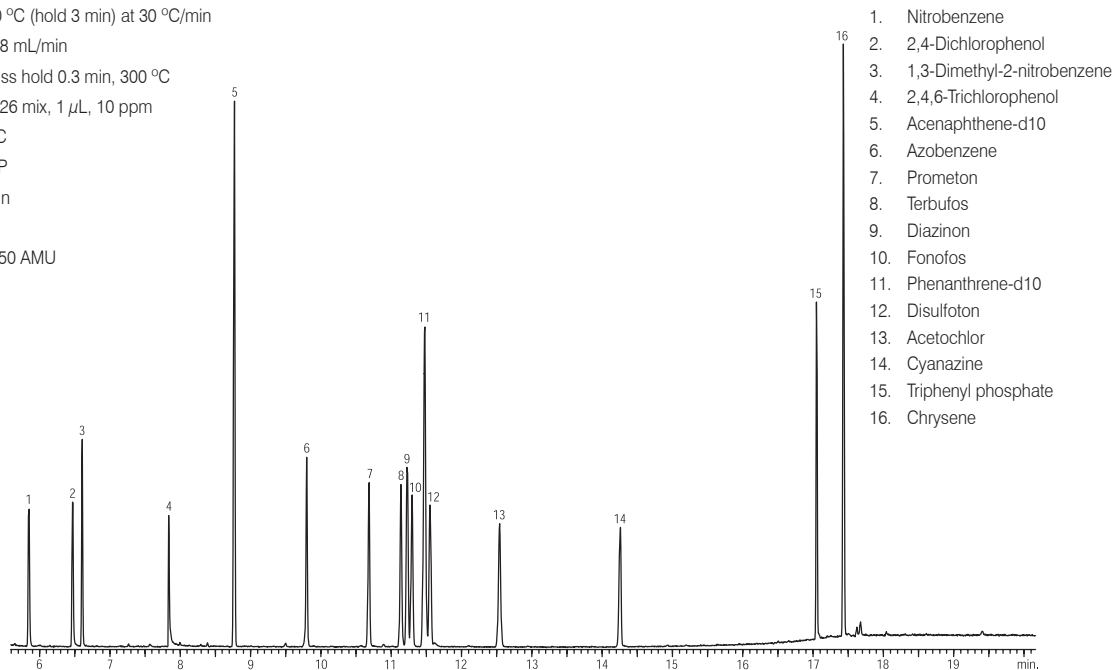


- | |
|----------------------------|
| 1. Naphthalene |
| 2. Acenaphthylene |
| 3. Acenaphthene |
| 4. Fluorene |
| 5. Phenanthrene |
| 6. Anthracene |
| 7. Fluoranthene |
| 8. Pyrene |
| 9. Benzo[a]anthracene |
| 10. 1,2-Benzphenanthrene |
| 11. Benzo[b]fluoranthene |
| 12. Benzo[k]fluoranthene |
| 13. Benzo[a]pyrene |
| 14. Indeno[1,2,3-cd]pyrene |
| 15. Dibenzo[a,h]anthracene |
| 16. Benzo[ghi]perylene |

Semi-volatiles

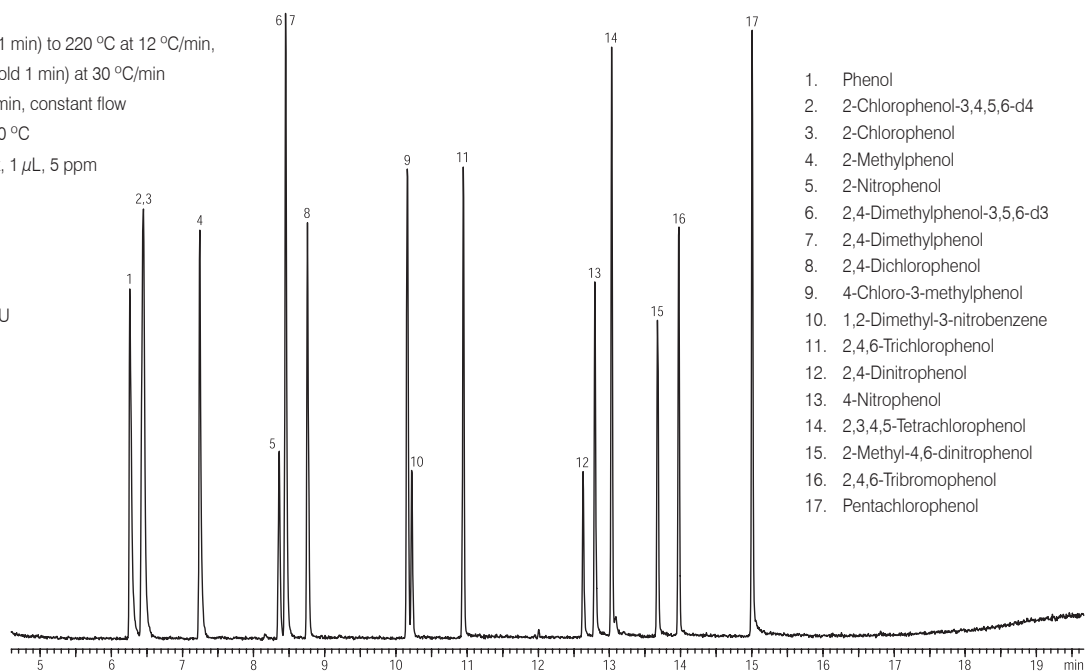
Volatile Organic Compounds (EPA 526)

Column: DM-5 MS / LB, 30 m x 0.25 mm x 0.25 μ m
Cat. No.: 8721
Index: CER00656
Oven Temp.: 50 °C (hold 1 min) to 200 °C (hold 5 min) at 20 °C/min,
to 310 °C (hold 3 min) at 30 °C/min
Carrier Gas: He, 0.8 mL/min
Injection: Splitless hold 0.3 min, 300 °C
Sample: EPA 526 mix, 1 μ L, 10 ppm
Transfer line Temp.: 280 °C
Tune: DFTPP
Solvent Delay: 5.5 min
Ionization: EI
Scan Range: 35 - 550 AMU
Detector: MS



Phenols (EPA 528)

Column: DM-5 MS / LB, 30 m x 0.25 mm x 0.25 μ m
Cat. No.: 8721
Index: CER00664
Oven Temp.: 40 °C (hold 1 min) to 220 °C at 12 °C/min,
to 300 °C (hold 1 min) at 30 °C/min
Carrier Gas: He, 1.3 mL/min, constant flow
Injection: Splitless, 220 °C
Sample: EPA 528 mix, 1 μ L, 5 ppm
Transfer line Temp.: 280 °C
Tune: DFTPP
Solvent Delay: 5.5 min
Ionization: EI
Scan Range: 35 - 550 AMU
Detector: MS



Semi-volatile Organic Compounds

Column: DM-5MS / LB, 30 m x 0.25 mm x 0.50 μ m

Cat. No.: 8723

Index: CER00532

Oven Temp.: 40 °C (hold 2 min) to 290 °C at 20 °C/min,
to 303 °C at 2 °C/min, to 330 °C (hold 1 min) at 6 °C/min

Carrier Gas: He, 1.0 mL/min, constant flow

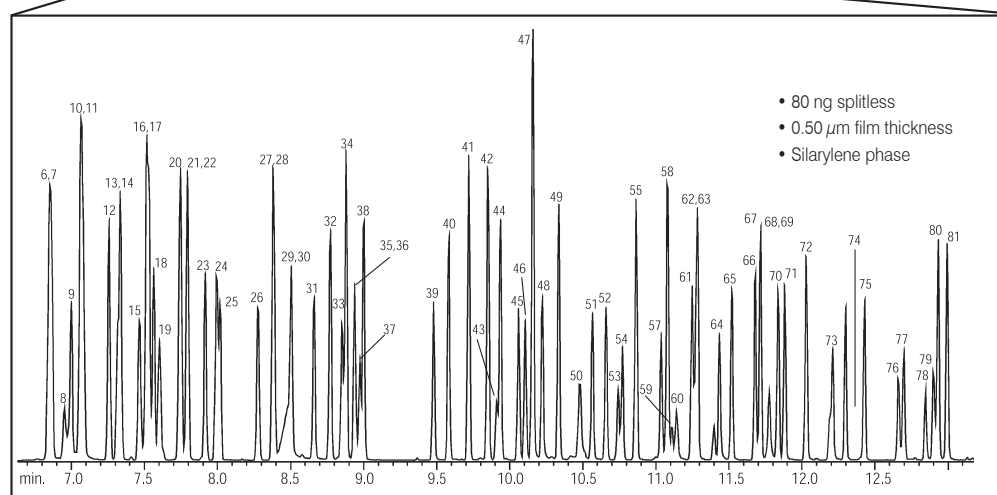
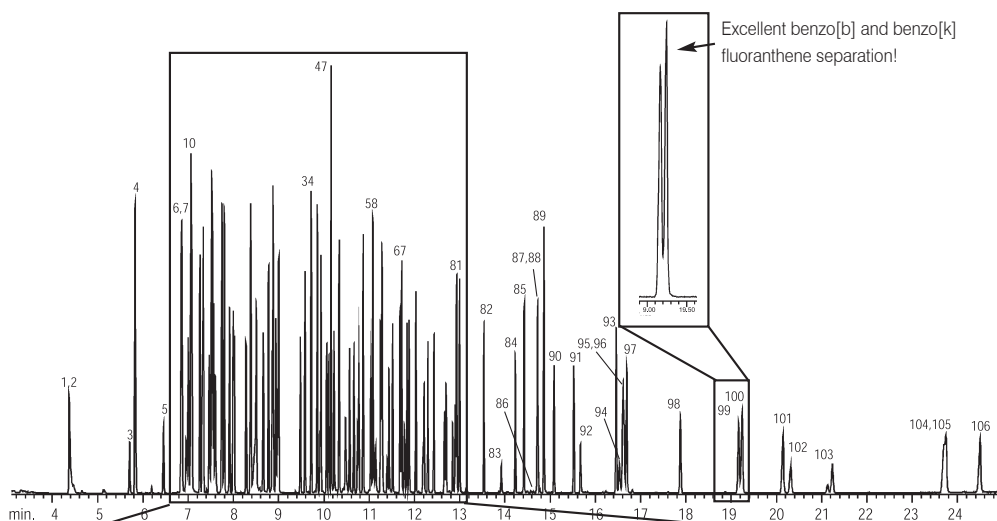
Injection: Splitless, 300 °C

Sample: EPA 8270 standard, 80 ng

Scan Range: 35 - 550 AMU

Detector: MS, 280 °C

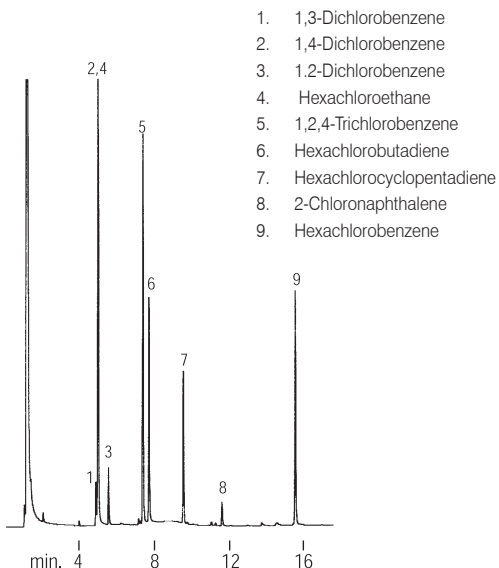
1. *N*-nitrosodimethylamine
2. Pyridine
3. Methyl methanesulfonate
4. 2-Fluorophenol
5. Ethyl methanesulfonate
6. Phenol-d6
7. Phenol
8. Aniline
9. *bis*(2-Chloroethyl)ether
10. 2-Chlorophenol-d4
11. 2-Chlorophenol
12. 1,3-Dichlorobenzene
13. 1,4-Dichlorobenzene-d4
14. 1,4-Dichlorobenzene
15. Benzyl alcohol
16. 1,2-Dichlorobenzene-d4
17. 1,2-Dichlorobenzene
18. 2-Methylphenol
19. *bis*(2-Chloroisopropyl)ether
20. 4-Methylphenol / 3-Methylphenol
21. *N*-Nitroso-*di-n*-propylamine
22. Acetophenone
23. Hexachloroethane
24. Nitrobenzene-d5
25. Nitrobenzene
26. Isophorone
27. 2,4-Dimethylphenol
28. 2-Nitrophenol
29. Benzoic acid
30. *bis*(2-Chloroethoxy)methane
31. 2,4-Dichlorophenol
32. 1,2,4-Trichlorobenzene
33. Naphthalene-d8
34. Naphthalene
35. 2,6-Dichlorophenol
36. 4-Chloroaniline
37. Hexachloropropene
38. Hexachlorobutadiene
39. 4-Chloro-3-methylphenol
40. Isosafrole
41. 2-Methylnaphthalene
42. 1-Methylnaphthalene
43. Hexachlorocyclopentadiene
44. 1,2,4,5-Tetrachlorobenzene
45. 2,4,6-Trichlorophenol
46. 2,4,5-Trichlorophenol
47. 2-Fluorobiphenyl
48. Safrole
49. 2-Chloronaphthalene
50. 2-Nitroaniline
51. 1,4-Naphthoquinone
52. Dimethylphthalate
53. 1,3-Dinitrobenzene
54. 2,6-Dinitrotoluene
55. Acenaphthylene
56. 3-Nitroaniline
57. Acenaphthene-d10
58. Acenaphthene
59. 2,4-Dinitrophenol
60. 4-Nitrophenol
61. Pentachlorobenzene
62. 2,4-Dinitrotoluene
63. Dibenzofuran
64. 2,3,4,6-Tetrachlorophenol
65. Diethyl phthalate
66. 4-Chlorophenyl phenyl ether
67. Fluorene
68. 4-Nitroaniline
69. 4,6-Dinitro-2-methylphenol
70. Diphenylamine
71. Azobenzene
72. 2,4,6-Tribromophenol
73. Phenacetin
74. 4-Bromophenyl phenyl ether
75. Hexachlorobenzene
76. Pentachlorophenol
77. Pentachloronitrobenzene
78. Dinoseb
79. Phenanthrene-d10
80. Phenanthrene
81. Anthracene
82. *di-n*-Butylphthalate
83. 4-Nitroquinoline-1-oxide
84. Isodrin
85. Fluoranthene
86. Benzidine
87. Pyrene
88. Aramite
89. *p*-Terphenyl-d14
90. Chlorbenzilate
91. Benzyl butyl phthalate
92. Kepone
93. *bis*(2-Ethylhexyl)phthalate
94. 3,3'-Dichlorobenzidine
95. Benzo[a]anthracene
96. Chrysene-d12
97. Chrysene
98. *di-n*-Octyl phthalate
99. Benzo[b]fluoranthene
100. Benzo[k]fluoranthene
101. Benzo[a]pyrene
102. Perylene-d12
103. 3-Methylcholanthrene
104. Indeno[1,2,3-*cd*]pyrene
105. Dibenzo[a,h]anthracene
106. Benzo[ghi]perylene



Pesticides

Chlorinated Hydrocarbons (EPA 612)

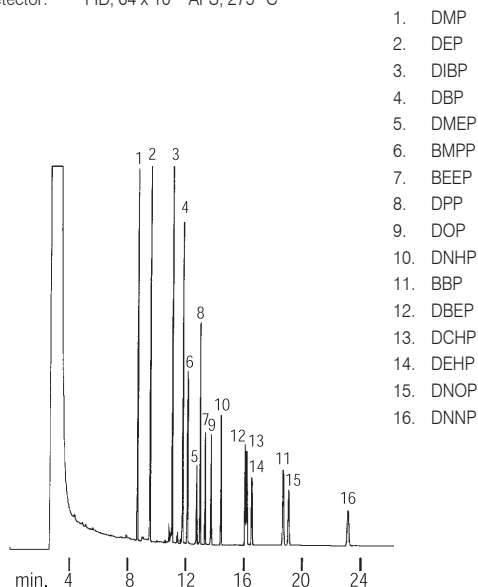
Column: DM-200, 30 m x 0.53 mm x 0.50 μ m
 Cat. No.: 8347
 Index: CER00051
 Oven Temp.: 40 °C to 280 °C (hold 5 min) at 8 °C/min
 Carrier Gas: He, 40 cm/sec, 40 °C
 Injection: Direct, 275 °C
 Sample: Chlorinated hydrocarbons mix, 0.5 μ L
 Detector: 220 °C



1. 1,3-Dichlorobenzene
2. 1,4-Dichlorobenzene
3. 1,2-Dichlorobenzene
4. Hexachloroethane
5. 1,2,4-Trichlorobenzene
6. Hexachlorobutadiene
7. Hexachlorocyclopentadiene
8. 2-Chloronaphthalene
9. Hexachlorobenzene

PAEs (EPA 8060)

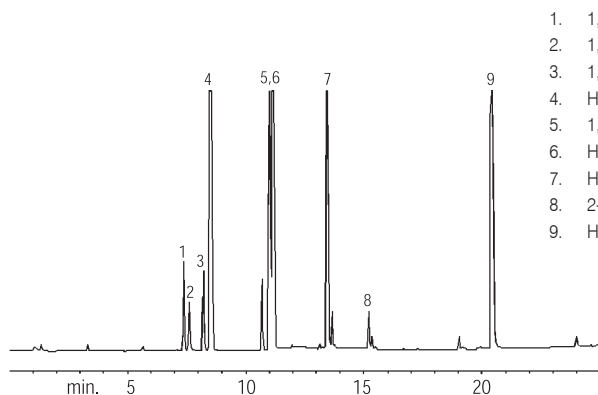
Column: DM-17, 30 m x 0.32 mm x 1.00 μ m
 Cat. No.: 7451
 Index: CER00037
 Oven Temp.: 100 °C to 275 °C (hold 10 min) at 15 °C/min
 Carrier Gas: He, 20 cm/sec
 Injection: Direct, 275 °C
 Sample: PAEs, 1.5 μ L, 60 μ g/mL
 Detector: FID, 64 x 10⁻¹¹ AFS, 275 °C



1. DMP
2. DEP
3. DIBP
4. DBP
5. DMEP
6. BMPP
7. BEEP
8. DPP
9. DOP
10. DNHP
11. BBP
12. DBEP
13. DCHP
14. DEHP
15. DNOP
16. DNNP

Chlorinated Hydrocarbons (EPA 612)

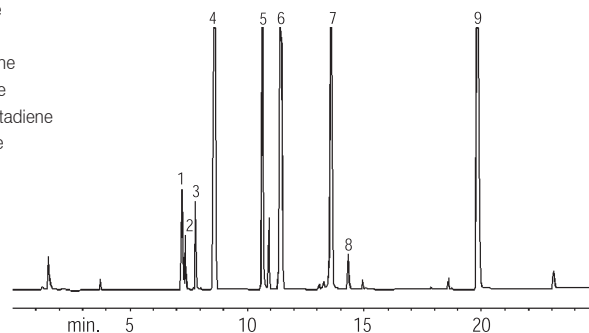
Column: DM-35, 30 m x 0.53 mm x 1.00 μ m
 Cat. No.: 7951
 Index: CER00052
 Oven Temp.: 40 °C to 250 °C (hold 5 min) at 8 °C/min
 Carrier Gas: He, 35 cm/sec, 40 °C
 Injection: Direct, 250 °C
 Sample: Chlorinated hydrocarbons, 0.1 μ L
 Detector: 300 °C



1. 1,3-Dichlorobenzene
2. 1,4-Dichlorobenzene
3. 1,2-Dichlorobenzene
4. Hexachloroethane
5. 1,2,4-Trichlorobenzene
6. Hexachlorobutadiene
7. Hexachlorocyclopentadiene
8. 2-Chloronaphthalene
9. Hexachlorobenzene

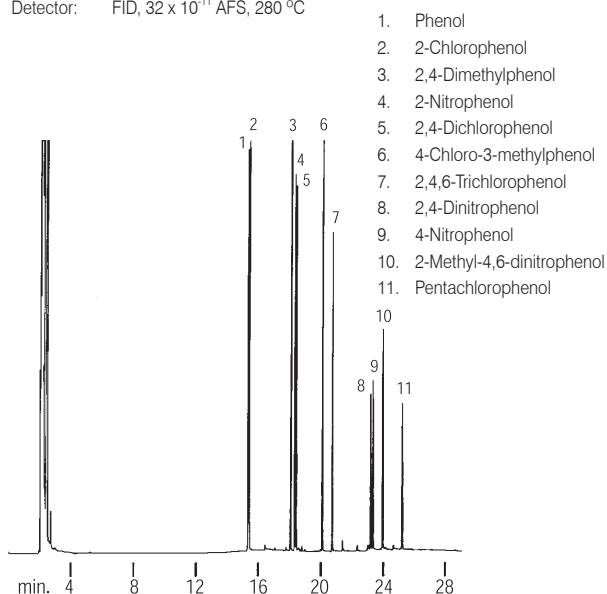
V.S.

Column: DM-5, 30 m x 0.53 mm x 0.50 μ m
 Cat. No.: 7247
 Index: CER00053
 Oven Temp.: 40 °C to 250 °C (hold 5 min) at 8 °C/min
 Carrier Gas: He, 35 cm/sec, 40 °C
 Injection: Direct, 250 °C
 Sample: Chlorinated hydrocarbons, 0.1 μ L
 Detector: 300 °C



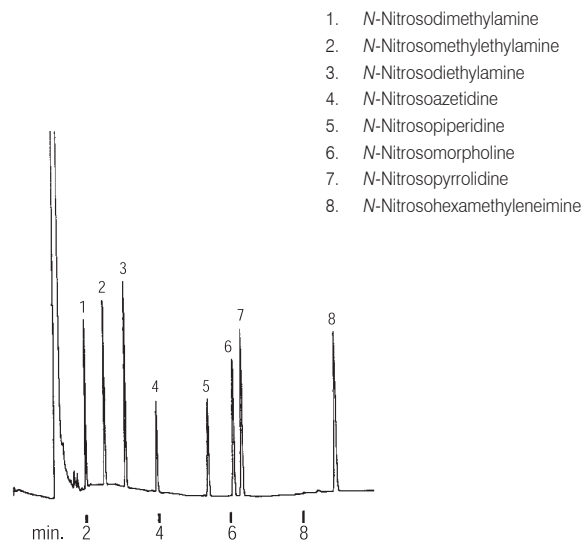
Phenols (EPA 604)

Column: DM-17, 30 m x 0.25 mm x 0.25 μ m
 Cat. No.: 7421
 Index: CER00029
 Oven Temp.: 50 °C (hold 10 min) to 250 °C (hold 15 min) at 15 °C/min
 Carrier Gas: He, 20 cm/sec
 Injection: Split, 40 cc/min, 280 °C
 Sample: Phenols mix, 1.0 μ L, 3 - 5 ng/ μ L
 Detector: FID, 32 x 10⁻¹¹ AFS, 280 °C



Nitrosamines

Column: DM-200, 30 m x 0.53 mm x 0.50 μ m
 Cat. No.: 8347
 Index: CER00040
 Oven Temp.: 100 °C (hold 1 min) to 200 °C at 5 °C/min
 Carrier Gas: H₂, 40 cm/sec
 Injection: Split, 40 cc/min, 250 °C
 Sample: Nitrosamines mix, 1.0 μ L, 10 μ g/mL
 Detector: FID, 16 x 10⁻¹² AFS, 250 °C

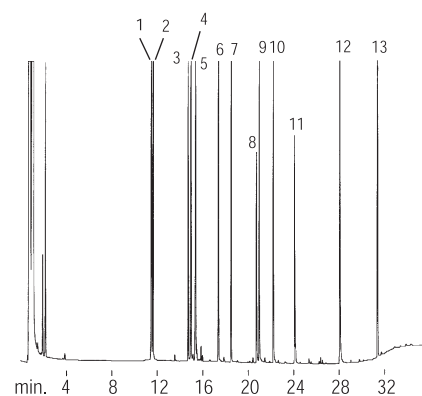
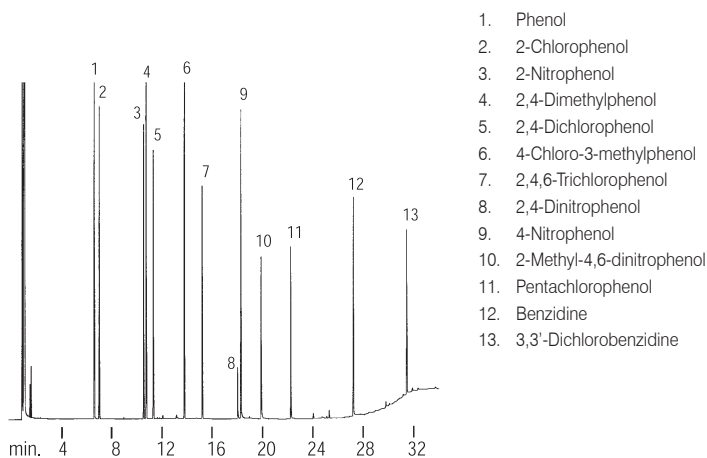


Benzidines / Phenols (EPA 604 / 605)

Column: DM-5, 30 m x 0.32 mm x 1.00 μ m
 Cat. No.: 7235
 Index: CER00032
 Oven Temp.: 110 °C to 290 °C at 8 °C/min
 Carrier Gas: H₂, 40 cm/sec
 Injection: Split, 100:1, 310 °C
 Sample: Phenols / Benzidines mix, 1.5 μ L
 Detector: FID, 2 x 10⁻¹¹ AFS, 310 °C

V.S.

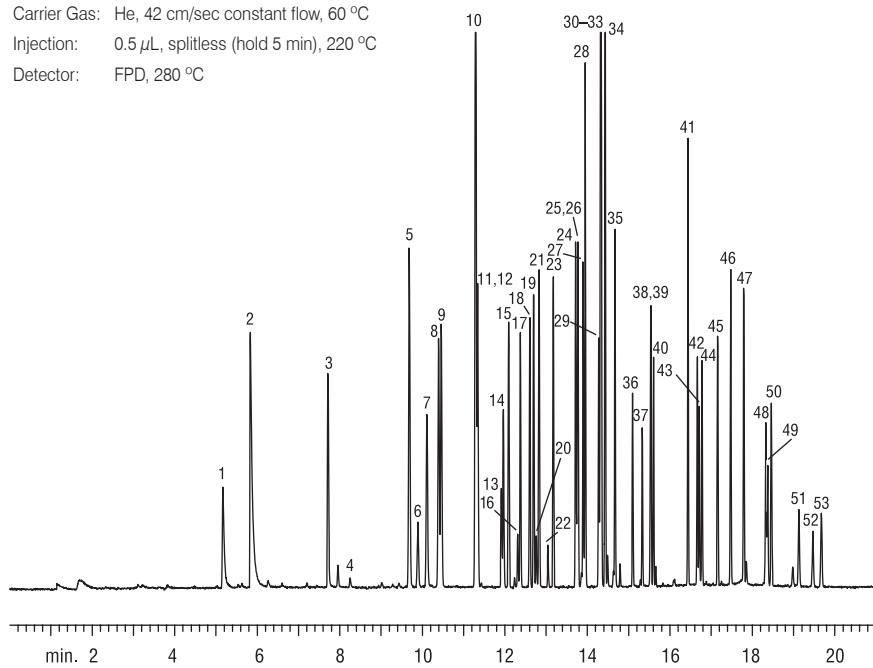
Column: DM-5, 30 m x 0.53 mm x 1.50 μ m
 Cat. No.: 7251
 Index: CER00033
 Oven Temp.: 40 °C (hold 6 min) to 300 °C (hold 15 min) at 10 °C/min
 Carrier Gas: H₂, 80 cm/sec
 Injection: Direct, 300 °C
 Sample: Phenols / Benzidines mix, 2.5 μ L
 Detector: FID, 8 x 10⁻¹¹ AFS, 300 °C



Pesticides

Organophosphorus Pesticides (EPA 8140 / 8141 / 8141A)

Column: DM-35, 30 m x 0.32 mm x 0.25 μ m
 Cat. No.: 7931
 Index: CER00696
 Oven Temp.: 100 °C to 180 °C (hold 2 min) at 10 °C/min to 300 °C at 18 °C/min
 Carrier Gas: He, 42 cm/sec constant flow, 60 °C
 Injection: 0.5 μ L, splitless (hold 5 min), 220 °C
 Detector: FPD, 280 °C

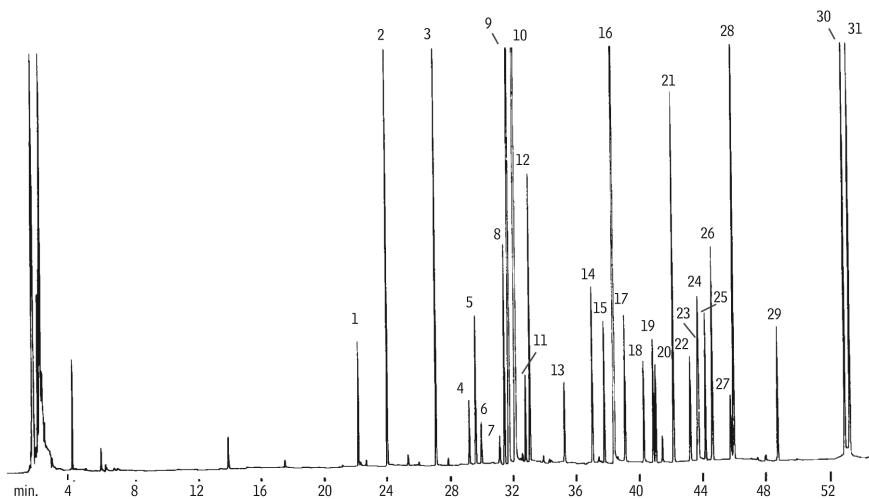


- | | |
|----------------------------|------------------------------------|
| 1. Dichlorvos | 29. Trichloronate |
| 2. Hexamethylphosphoramide | 30. Chlorpyrifos |
| 3. Mevinphos | 31. Fenitrothion |
| 4. Trichlorfon | 32. Merphos |
| 5. Tributyl phosphate | 33. Malathion |
| 6. Demeton-O | 34. Parathion-ethyl |
| 7. TEPP | 35. Fenthion |
| 8. Thionazin | 36. Chlorfenvinphos |
| 9. Ethoprop | 37. Crotoxyphos |
| 10. Sulfotepp | 38. Merphos oxone |
| 11. Naled | 39. Tokuthion |
| 12. Phorate | 40. Stirofos |
| 13. Dicrotophos | 41. Ethion |
| 14. Demeton-S | 42. Bolstar |
| 15. Terbufos | 43. Fensulfotion |
| 16. Monocrotophos | 44. Carbofenthion |
| 17. Diazinon | 45. Famphur |
| 18. Fonophos | 46. Triphenyl phosphate |
| 19. Disulfoton | 47. EPN |
| 20. Dioxathion | 48. Phosmet |
| 21. Dimethoate | 49. Leptophos |
| 22. Phosphamidon isomer | 50. <i>tri-o</i> -Cresyl phosphate |
| 23. Dichlorofenthion | 51. Azinphos-methyl |
| 24. Chlorpyrifos methyl | 52. Azinphos-ethyl |
| 25. Phosphamidon | 53. Coumaphos |
| 26. Ronnel | |
| 27. Parathion-methyl | |
| 28. Aspon | |

Organochlorine Pesticides

Column: DM-5, 30 m x 0.25 mm x 0.25 μ m
 Cat. No.: 7221
 Index: CER00083
 Oven Temp.: 60 °C to 300 °C (hold 10 min) at 4 °C/min
 Carrier Gas: He, 30 cm/sec
 Injection: Splitless, 250 °C
 Sample: Pesticides mix, 2.0 μ L
 Detector: 320 °C

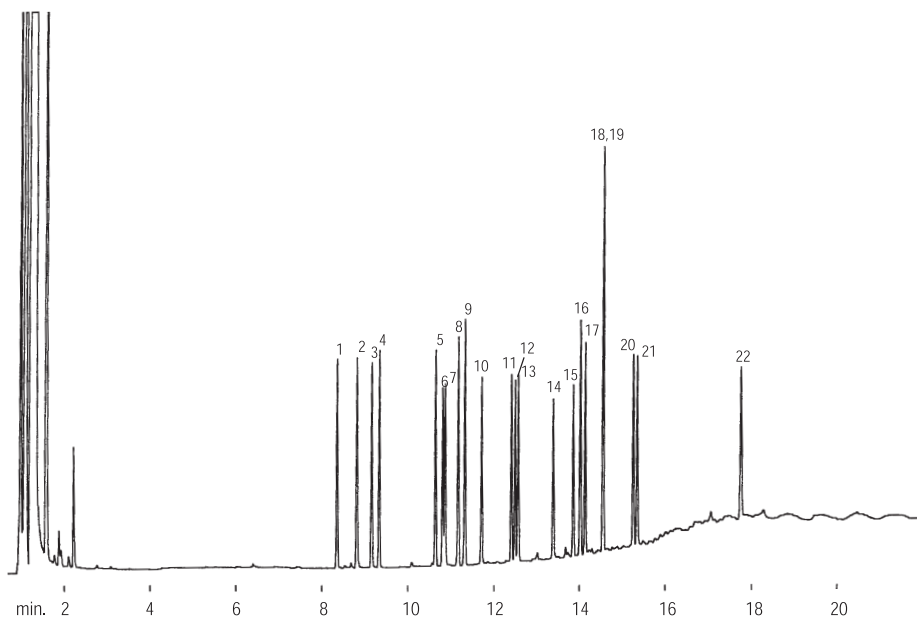
- | | | |
|-------------------------------------|--|---|
| 1. Etridiazole 50 pg/ μ L | 11. δ -BHC 20 pg/ μ L | 22. Endrin 30 pg/ μ L |
| 2. Chlorneb 1000 pg/ μ L | 12. Chlorothalonil 50 pg/ μ L | 23. Endosulfan II 30 pg/ μ L |
| 3. Propachlor 1000 pg/ μ L | 13. Heptachlor 20 pg/ μ L | 24. Chlorobenzilate 1000 pg/ μ L |
| 4. Trifluralin 50 pg/ μ L | 14. Aldrin 30 pg/ μ L | 25. 4,4'-DDD 50 pg/ μ L |
| 5. α -BHC 20 pg/ μ L | 15. DCPA 50 pg/ μ L | 26. Endrin aldehyde 50 pg/ μ L |
| 6. Hexachlorobenzene 10 pg/ μ L | 16. DCB 5000 pg/ μ L | 27. Endosulfan sulfate 30 pg/ μ L |
| 7. γ -BHC 30 pg/ μ L | 17. Heptachlor epoxide 30 pg/ μ L | 28. 4,4'-DDT 120 pg/ μ L |
| 8. β -BHC 20 pg/ μ L | 18. γ -Chlordane 30 pg/ μ L | 29. Methoxychlor 100 pg/ μ L |
| 9. PCNB 100 pg/ μ L | 19. Endosulfan I 30 pg/ μ L | 30. <i>cis</i> -Permethrin 1000 pg/ μ L |
| 10. PCNB (IS) 100 pg/ μ L | 20. α -Chlordane 30 pg/ μ L | 31. <i>trans</i> -Permethrin 1000 pg/ μ L |
| | 21. Dieldrin 40 pg/ μ L | |



Nitrogen-Containing Herbicides

Column: DM-35, 30 m x 0.53 mm x 1.00 μ m
 Cat. No.: 7951
 Index: CER00088
 Oven Temp.: 60 °C (hold 1 min) to 290 °C (hold 5 min) at 15 °C/min
 Carrier Gas: He, 40 cm/sec
 Injection: Direct, 290 °C
 Sample: Nitrogen-containing herbicides, 0.2 μ L
 Detector: FID, 16×10^{-11} AFS, 290 °C

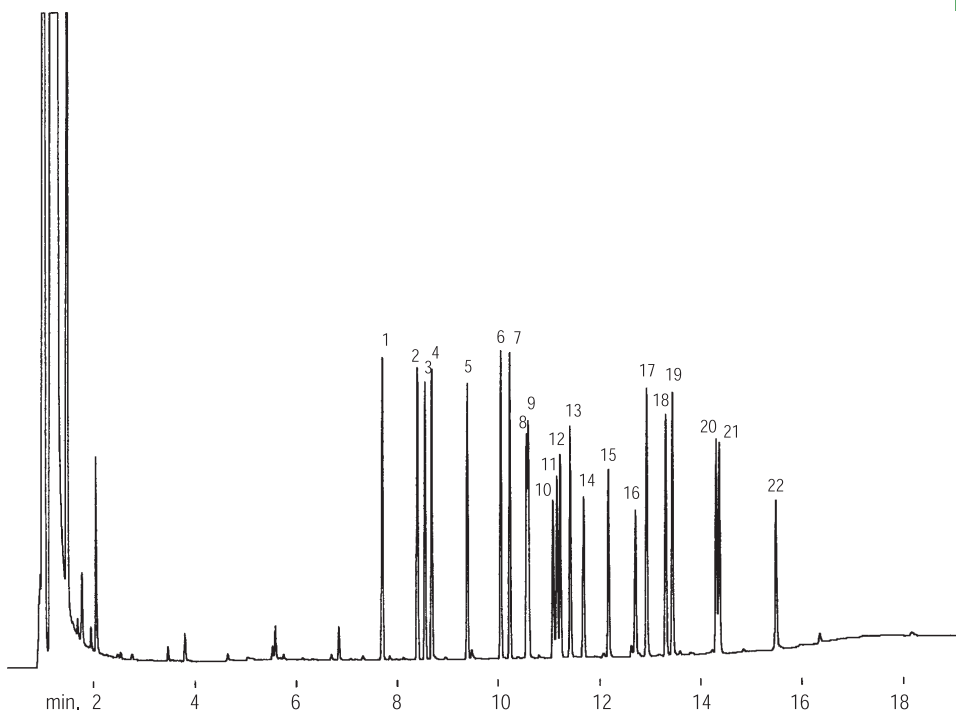
- | | |
|---------------|----------------|
| 1. Eptam | 13. Simazine |
| 2. Sutan | 14. Terbacil |
| 3. Vernam | 15. Sencor |
| 4. Tillam | 16. Dual |
| 5. Ordram | 17. Paarlán |
| 6. Treflan | 18. Prowl |
| 7. Balan | 19. Bromacil |
| 8. Ro-Neet | 20. Oxadiazon |
| 9. Propachlor | 21. GOAL |
| 10. Tolban | 22. Hexazinone |
| 11. Propazine | |
| 12. Atrazine | |



Nitrogen-Containing Herbicides

Column: DM-5, 30 m x 0.53 mm x 0.50 μ m
 Cat. No.: 7247
 Index: CER00087
 Oven Temp.: 60 °C (hold 1 min) to 290 °C (hold 5 min) at 15 °C/min
 Carrier Gas: He, 40 cm/sec
 Injection: Direct, 290 °C
 Sample: Nitrogen-containing herbicides, 0.2 μ L
 Detector: FID, 16×10^{-11} AFS, 290 °C

- | | |
|---------------|----------------|
| 1. Eptam | 13. Tolban |
| 2. Sutan | 14. Terbacil |
| 3. Vernam | 15. Sencor |
| 4. Tillam | 16. Bromacil |
| 5. Ordram | 17. Dual |
| 6. Propachlor | 18. Paarlán |
| 7. Ro-Neet | 19. Prowl |
| 8. Treflan | 20. Oxadiazon |
| 9. Balan | 21. GOAL |
| 10. Simazine | 22. Hexazinone |
| 11. Atrazine | |
| 12. Propazine | |

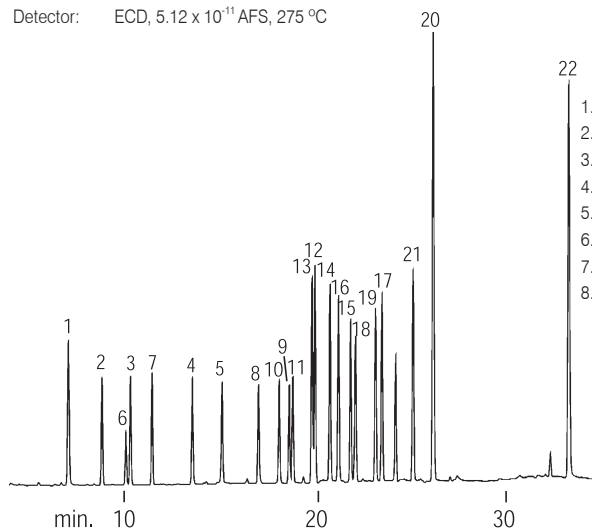


Applications

Pesticides

Organochlorine Pesticides (EPA 8081)

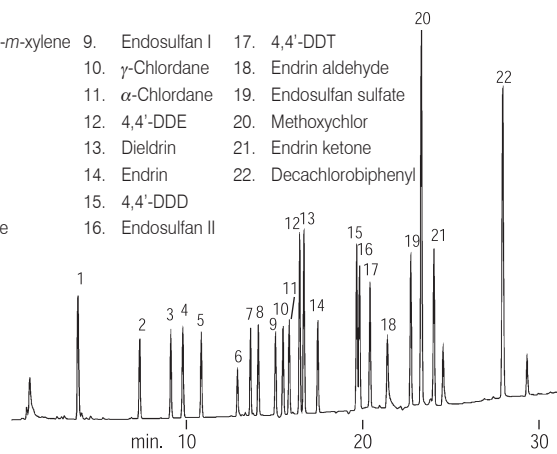
Column: DM-5, 30 m x 0.53 mm x 0.50 μ m
 Cat. No.: 7247
 Index: CER00408
 Oven Temp.: 150 °C (hold 5 min) to 275 °C (hold 5 min) at 4 °C/min
 Carrier Gas: He, 40 cm/sec
 Injection: Direct, 200 °C
 Sample: Pesticides mix, 1.0 μ L, 80 - 800 ng/mL
 Detector: ECD, 5.12 x 10⁻¹¹ AFS, 275 °C



1. 2,4,5,6-Tetrachloro-*m*-xylene
2. α -BHC
3. γ -BHC
4. Heptachlor
5. Aldrin
6. β -BHC
7. δ -BHC
8. Heptachlor epoxide
9. Endosulfan I
10. γ -Chlordane
11. α -Chlordane
12. 4,4'-DDE
13. Dieldrin
14. Endrin
15. 4,4'-DDD
16. Endosulfan II
17. 4,4'-DDT
18. Endrin aldehyde
19. Endosulfan sulfate
20. Methoxychlor
21. Endrin ketone
22. Decachlorobiphenyl

Organochlorine Pesticides (EPA 8081)

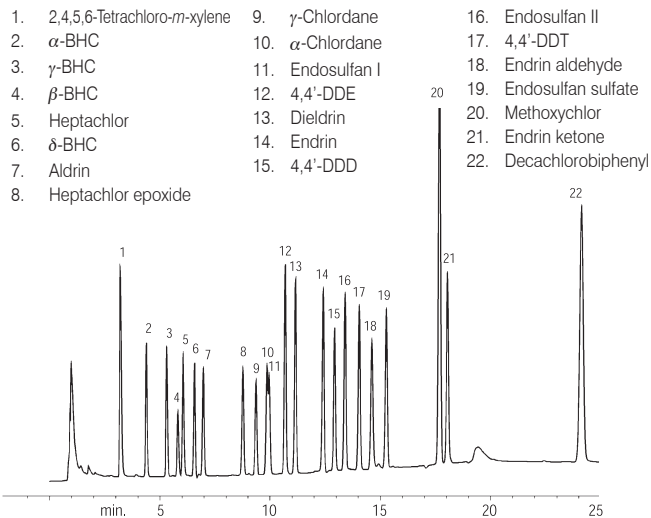
Column: DM-1701, 30 m x 0.53 mm x 0.50 μ m
 Cat. No.: 7347
 Index: CER00409
 Oven Temp.: 150 °C (hold 5 min) to 275 °C (hold 5 min) at 4 °C/min
 Carrier Gas: He, 40 cm/sec, 150 °C
 Injection: Direct, 200 °C
 Sample: Organochlorine pesticides, 1.0 μ L, 80 - 800 ng/mL
 Detector: ECD, 5.12 x 10⁻¹⁰ AFS, 275 °C



1. 2,4,5,6-Tetrachloro-*m*-xylene
2. α -BHC
3. γ -BHC
4. Heptachlor
5. Aldrin
6. β -BHC
7. δ -BHC
8. Heptachlor epoxide
9. Endosulfan I
10. γ -Chlordane
11. α -Chlordane
12. 4,4'-DDE
13. Dieldrin
14. Endrin
15. 4,4'-DDD
16. Endosulfan II
17. 4,4'-DDT
18. Endrin aldehyde
19. Endosulfan sulfate
20. Methoxychlor
21. Endrin ketone
22. Decachlorobiphenyl

Organochlorine Pesticides (EPA 8081)

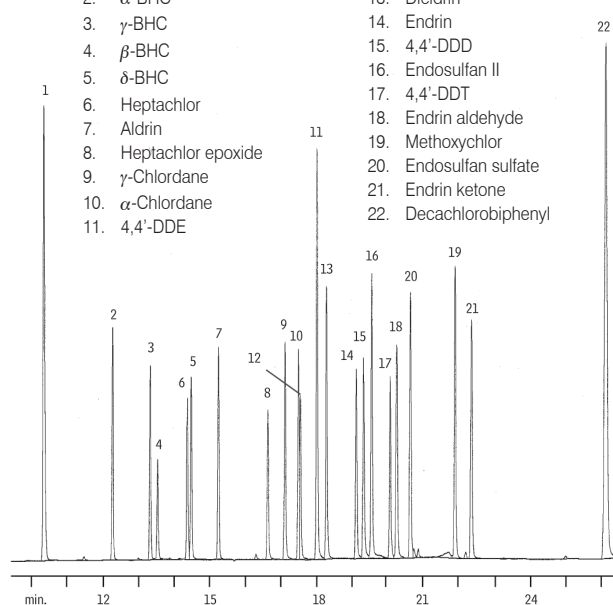
Column: DM-17, 30 m x 0.53 mm x 1.00 μ m
 Cat. No.: 7451
 Index: CER00410
 Oven Temp.: 150 °C (hold 5 min) to 275 °C (hold 5 min) at 8 °C/min
 Carrier Gas: He, 40 cm/sec, 150 °C
 Injection: Direct, 200 °C
 Sample: Pesticides, 1.0 μ L
 Detector: ECD, 5.12 X 10⁻¹⁰ AFS, 275 °C



1. 2,4,5,6-Tetrachloro-*m*-xylene
2. α -BHC
3. γ -BHC
4. β -BHC
5. Heptachlor
6. δ -BHC
7. Aldrin
8. Heptachlor epoxide
9. γ -Chlordane
10. α -Chlordane
11. Endosulfan I
12. 4,4'-DDE
13. Dieldrin
14. Endrin
15. 4,4'-DDD
16. Endosulfan II
17. 4,4'-DDT
18. Endrin aldehyde
19. Endosulfan sulfate
20. Methoxychlor
21. Endrin ketone
22. Decachlorobiphenyl

Organochlorine Pesticides (EPA 8081)

Column: DM-35, 30 m x 0.32 mm x 0.50 μ m
 Cat. No.: 7933
 Index: CER00079
 Oven Temp.: 120 °C (hold 1 min) to 285 °C (hold 6 min) at 8.5 °C/min
 Carrier Gas: He, 2.1 mL/min, 120 °C
 Injection: Direct, 200 °C
 Detector: ECD 300 °C with anode purge



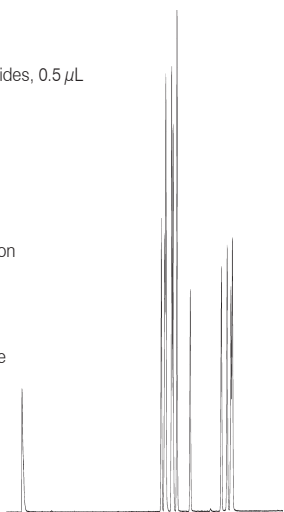
1. 2,4,5,6-Tetrachloro-*m*-xylene
2. α -BHC
3. γ -BHC
4. β -BHC
5. δ -BHC
6. Heptachlor
7. Aldrin
8. Heptachlor epoxide
9. γ -Chlordane
10. α -Chlordane
11. 4,4'-DDE
12. Endosulfan I
13. Dieldrin
14. Endrin
15. 4,4'-DDD
16. Endosulfan II
17. 4,4'-DDT
18. Endrin aldehyde
19. Methoxychlor
20. Endosulfan sulfate
21. Endrin ketone
22. Decachlorobiphenyl

Applications

Triazine Herbicides (EPA 619)

Column: DM-17, 30 m x 0.53 mm x 0.50 μ m
 Cat. No.: 7451
 Index: CER00058
 Oven Temp.: 150 °C to 250 °C (hold 5 min) at 4 °C/min
 Carrier Gas: He, 40 cm/sec, 150 °C
 Injection: Direct, 250 °C
 Sample: EPA Method 619 triazine herbicides, 0.5 μ L
 Detector: TSD, 275 °C

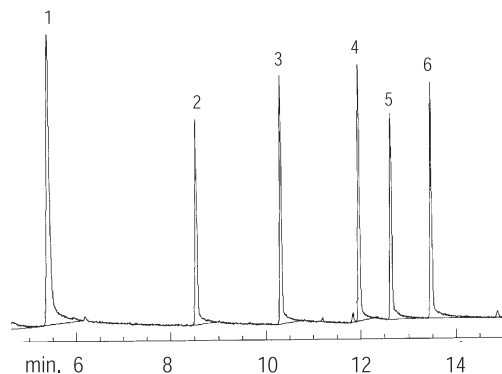
- | | |
|------------------|----------------|
| 1. Atraton | 7. Secbumeton |
| 2. Prometon | 8. Terbutryne |
| 3. Terbutylazine | 9. Ametryne |
| 4. Atrazine | 10. Simetryne |
| 5. Simazine | 11. Prometryne |
| 6. Propazine | |



Butyl Tins

Column: DM-5, 30 m x 0.32 mm x 0.50 μ m
 Cat. No.: 7233
 Index: CER00047
 Oven Temp.: 100 °C (hold 1 min) to 285 °C at 10 °C/min
 Carrier Gas: He, 45 cm/sec
 Injection: 500 pg on-column direct, 250 °C
 Detector: FPD with 610 nm filter, 250 °C

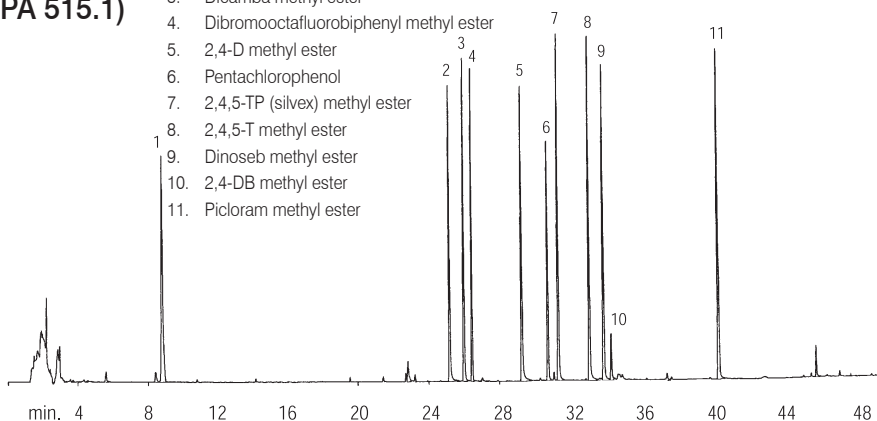
1. Tetrapropyltin
2. Tetrabutyltin
3. Tributyltin
4. Dibutyltin
5. Tripropyltin
6. Monobutyltin



Chlorophenoxyacid Herbicides (EPA 515.1)

Column: DM-17, 30 m x 0.25 mm x 0.50 μ m
 Cat. No.: 7423
 Index: CER00093
 Oven Temp.: 50 °C (hold 0.75 min) to 84 °C at 4 °C/min,
 to 165 °C at 10 °C/min to 270 °C at 4 °C/min,
 to 300 °C (hold 6 min) at 20 °C/min
 Carrier Gas: He, 30 cm/sec constant flow, 50 °C
 Injection: Splitless, 0.75 min, 220 °C
 Sample: Chlorophenoxyacid herbicides, 2.0 μ L
 Detector: ECD, 320 °C

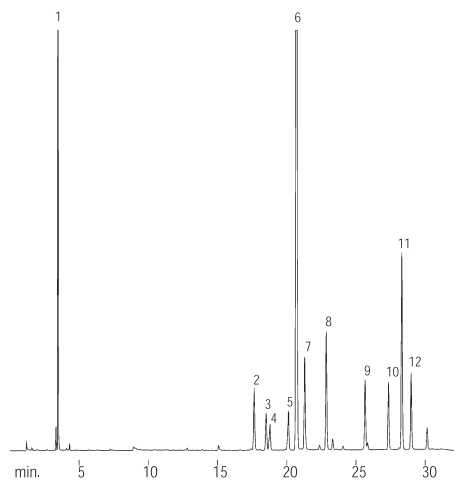
1. Dalapon methyl ester
2. 2,4-Dichlorophenylacetic acid methyl ester
3. Dicamba methyl ester
4. Dibromooctafluorobiphenyl methyl ester
5. 2,4-D methyl ester
6. Pentachlorophenol
7. 2,4,5-TP (silvex) methyl ester
8. 2,4,5-T methyl ester
9. Dinoseb methyl ester
10. 2,4-DB methyl ester
11. Picloram methyl ester



Chlorophenoxyacid Herbicides (EPA 615)

Column: DM-35, 30 m x 0.53 mm x 1.00 μ m
 Cat. No.: 7951
 Index: CER00094
 Oven Temp.: 60 °C to 150 °C (hold 5 min) at 8 °C/min,
 to 210 °C at 4 °C/min
 Carrier Gas: He, 35 cm/sec, 60 °C
 Injection: Direct, 250 °C
 Sample: Chlorophenoxyacid herbicides, 0.5 μ L
 Detector: ECD w / anode purge, 275 °C

1. Dalapon
2. DCAA (SS)
3. Dicamba
4. MCPP
5. MCPA
6. DBOB (IS)
7. Dichlorprop
8. 2,4-D
9. 2,4,5-TP
10. 2,4,5-T
11. Dinoseb
12. 2,4-DB

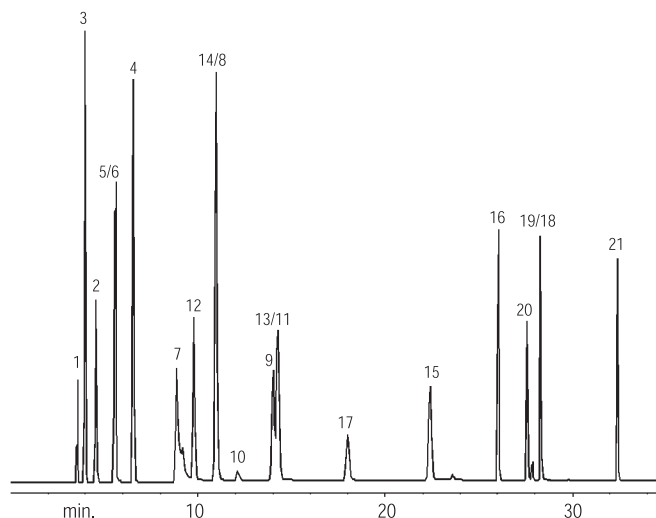


Applications

Drinking Water

Volatile Organic Compounds in Water (EPA 551.1)

Column: DM-200, 30 m x 0.25 mm x 1.00 μ m
 Cat. No.: 8325
 Index: CER00024
 Oven Temp.: 35 $^{\circ}$ C (hold 22 min) to 200 $^{\circ}$ C at 10 $^{\circ}$ C/min,
 Carrier Gas: He, 30 cm/sec, 50 $^{\circ}$ C
 Injection: 1 ng on-column, 200 $^{\circ}$ C
 Split Ratio: 10:1
 Detector: ECD, 20 kHz full scale, 290 $^{\circ}$ C

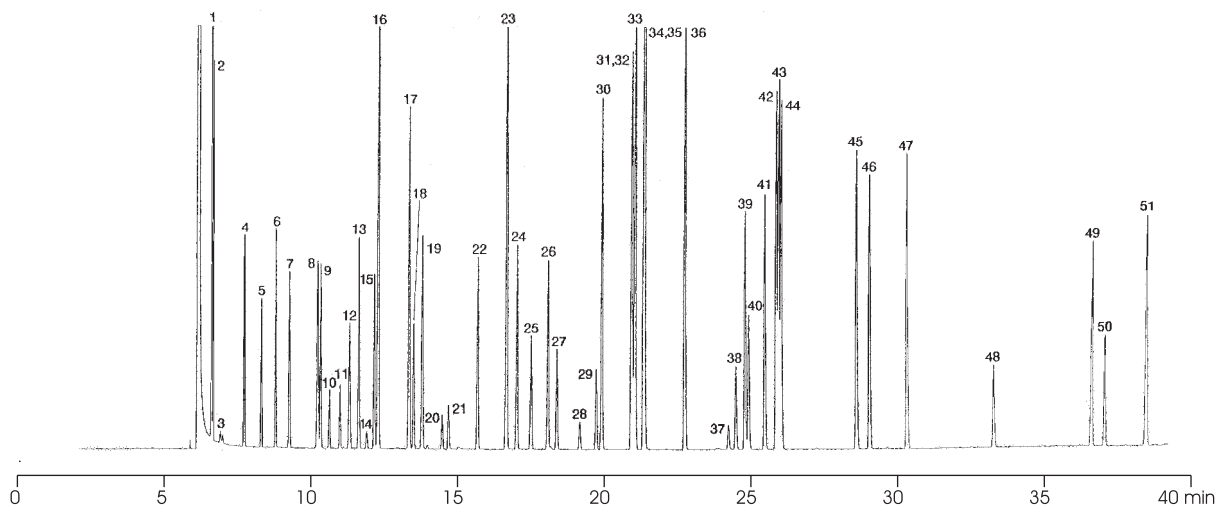


1. Chloroform
2. 1,1,1-Trichloroethane
3. Carbon tetrachloride
4. Trichloroacetonitrile
5. Trichloroethylene
6. Bromodichloromethane
7. Chloral hydrate
8. Dichloroacetonitrile
9. 1,1-Dichloro-2-propanone
10. 1,1,2-Trichloroethane
11. Chloropicrin
12. Dibromochloromethane
13. 1,2-Dibromoethane
14. Tetrachloroethylene
15. Bromochloroacetonitrile
16. 1,1,1-Trichloro-2-propanone
17. Bromoform
18. Dibromoacetonitrile
19. 1,2,3-Trichloropropane
20. 4-Bromofluorobenzene
21. 1,2-Dibromo-3-chloropropane

Volatile Organic Compounds in Water

Column: DM-AQUA, 60 m x 0.25 mm x 1.00 μ m
 Cat.No.: 7801
 Index: CEO04281
 Carrier Gas: He, 25 cm/sec, 150 $^{\circ}$ C
 Oven Temp.: 40 $^{\circ}$ C to 200 $^{\circ}$ C at 4 $^{\circ}$ C/min
 Injection: Split, 1:100, 0.5 μ L
 Detector: FID

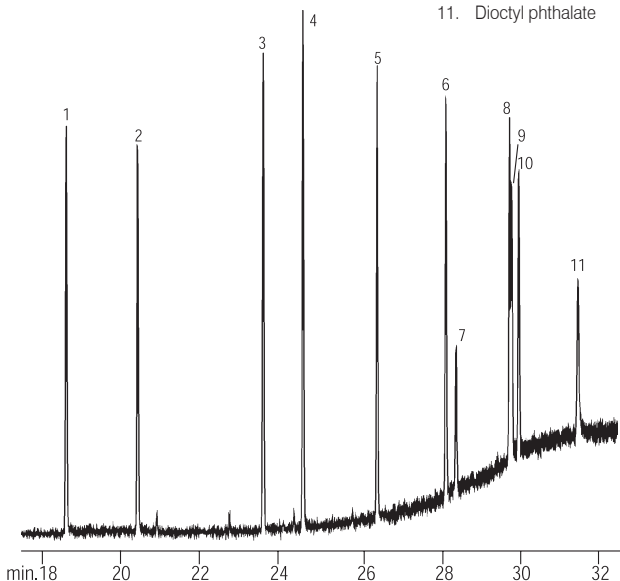
- | | | | |
|---------------------------------------|---|-------------------------------|--|
| 1. Bromomethane | 16. 1,2-Dichloroethane | 29. 1-Chlorohexane | 43. <i>m</i> -Chlorotoluene |
| 2. Chloroethane | 17. Benzene | 30. 1,2-Dibromoethane | 44. <i>p</i> -Chlorotoluene |
| 3. Trichlorofluoromethane | 18. Benzotrifluoride | 31. Chlorobenzene | 45. 1,3-Dichlorobenzene |
| 4. 1,1-Dichloroethylene | 19. Trichloroethylene | 32. 1,1,1,2-Tetrachloroethane | 46. 1,4-Dichlorobenzene |
| 5. Dichloromethane | 20. 1,2-Dichloropropane | 33. Ethylbenzene | 47. 1,2-Dichlorobenzene |
| 6. <i>trans</i> -1,2-Dichloroethylene | 21. Bromodichloromethane | 34. <i>m</i> -Xylene | 48. 1,2-Dibromo-3-chloropropane |
| 7. 1,1-Dichloroethane | 22. Dibromomethane | 35. <i>p</i> -Xylene | 49. 1,2,4-Trichlorobenzene |
| 8. 2,2-Dichloropropane | 23. <i>cis</i> -1,3-Dichloropropylene | 36. <i>o</i> -Xylene | 50. 1,1,2,3,4,4-Hexachloro-1,2-butadiene |
| 9. <i>cis</i> -1,2-Dichloroethylene | 24. Toluene | 37. Bromoform | 51. 1,2,3-Trichlorobenzene |
| 10. Chloroform | 25. <i>trans</i> -1,3-Dichloropropylene | 38. 1,1,2,2-Tetrachloroethane | |
| 11. Bromochloromethane | 26. 1,1,2-Trichloroethane | 39. 4-Bromofluorobenzene | |
| 12. 1,1,1-Trichloroethane | 27. 1,3-Dichloropropane | 40. 1,2,3-Trichloropropane | |
| 13. 1,1-Dichloropropene | 28. Tetrachloroethylene | 41. Bromobenzene | |
| 14. Tetrachloromethane | 29. Dibromochloromethane | 42. <i>o</i> -Chlorotoluene | |



PAEs

Column: DM-5MS, 30 m x 0.25 mm x 0.50 μm
 Cat. No.: 8223
 Index: CER00049
 Oven Temp.: 35 °C (hold 1 min) to 285 °C at 10 °C/min
 Pressure: 7.5 psi
 Injection: 100 pg on-column
 Detector: MS-SIM

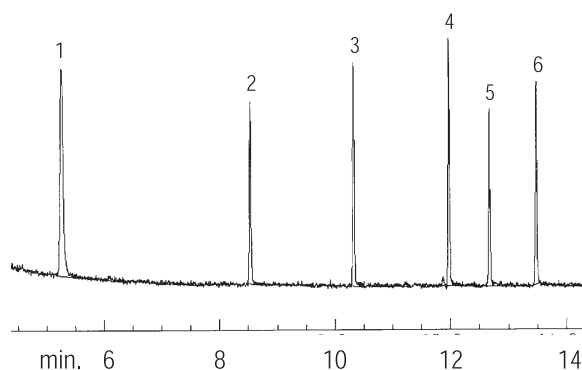
1. Dimethyl phthalate
2. Diethyl phthalate
3. Isobutyl phthalate
4. Dibutyl phthalate
5. Dipentyl phthalate
6. Dihexyl phthalate
7. Benzyl ethyl phthalate
8. Diheptyl phthalate
9. 2-Ethylhexyl phthalate
10. Cyclohexyl phthalate
11. Dioctyl phthalate



Endocrine Disruptors Butyl Tins (Hexyl Derivatives)

Column: DM-35, 30 m x 0.32 mm x 0.50 μm
 Cat. No.: 7933
 Index: CER00048
 Oven Temp.: 100 °C (hold 1 min) to 285 °C at 10 °C/min
 Carrier Gas: He, 45 cm/sec
 Injection: 500 pg on-column, 250 °C
 Detector: FPD with 610 nm filter, 250 °C

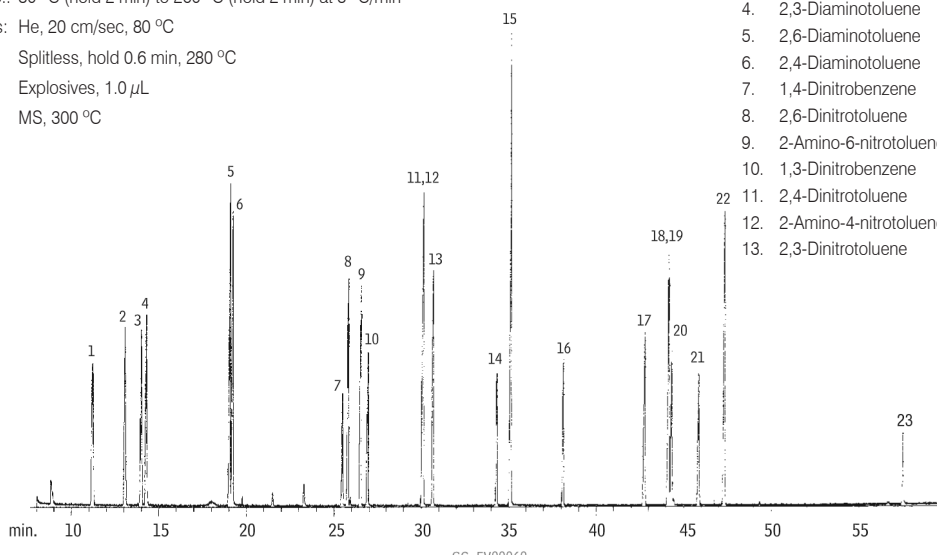
1. Tetrapropyltin
2. Tetrabutyltin
3. Tributyltin
4. Dibutyltin
5. Tripentyltin
6. Monobutyltin



Explosives

Column: DM-200, 30 m x 0.25 mm x 0.25 μm
 Cat. No.: 8321
 Index: CER00060
 Oven Temp.: 80 °C (hold 2 min) to 260 °C (hold 2 min) at 3 °C/min
 Carrier Gas: He, 20 cm/sec, 80 °C
 Injection: Splitless, hold 0.6 min, 280 °C
 Sample: Explosives, 1.0 μL
 Detector: MS, 300 °C

- | | |
|----------------------------|--------------------------------|
| 1. 2-Nitrotoluene | 14. 3,4-Dinitrotoluene |
| 2. 3-Nitrotoluene | 15. 3-Nitrobiphenyl |
| 3. 4-Nitrotoluene | 16. 2,4,6-Trinitrotoluene |
| 4. 2,3-Diaminotoluene | 17. 2,4,5-Trinitrotoluene |
| 5. 2,6-Diaminotoluene | 18. 4-Amino-2,6-dinitrotoluene |
| 6. 2,4-Diaminotoluene | 19. 2,3,4-Trinitrotoluene |
| 7. 1,4-Dinitrobenzene | 20. 1,3-Dinitronaphthalene |
| 8. 2,6-Dinitrotoluene | 21. 2,6-Diamino-4-nitrotoluene |
| 9. 2-Amino-6-nitrotoluene | 22. 2-Amino-4,6-dinitrotoluene |
| 10. 1,3-Dinitrobenzene | 23. 2,2'-Dinitrobiphenyl |
| 11. 2,4-Dinitrotoluene | |
| 12. 2-Amino-4-nitrotoluene | |
| 13. 2,3-Dinitrotoluene | |



Applications

Petrochemicals

Permanent Gases

Column: DM-PLOT Q + DM-PLOT MS 5A,

A: 30 m x 0.53 mm x 20.00 μ m

B: 30 m x 0.32 mm x 30.00 μ m

Cat. No.: **8816 + 8822 = A + B**

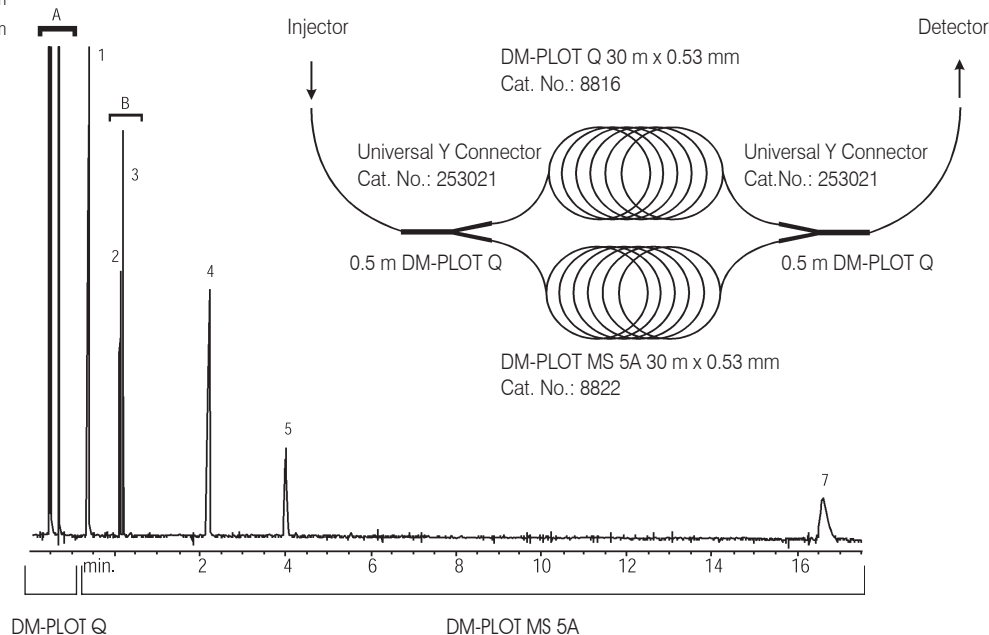
Index: CSR00171

Carrier Gas: H₂, 8 psi

Injection: Split, 10:1, 20 μ L

Detector: TCD, 200 °C

1. Helium
2. Argon
3. Oxygen
4. Nitrogen
5. Methane
6. Carbon dioxide
7. Carbon monoxide



Applications

Permanent Gases

Column: DM-PLOT Q,

30 m x 0.32 mm x 10.00 μ m

Cat. No.: **8818**

Index: CSR00169

Oven Temp.: 30 °C

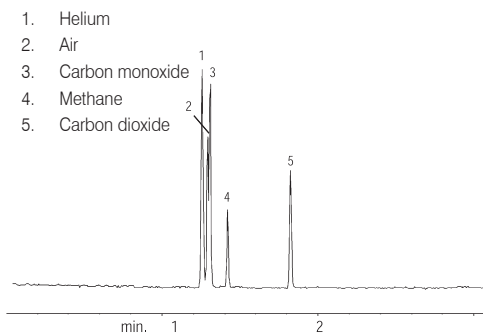
Carrier Gas: H₂, 38 cm/sec

Injection: Split, 40:1, 30 °C

Sample Concentration: 2 - 5 mol %, 30 μ L

Detector: TCD, 200 °C

1. Helium
2. Air
3. Carbon monoxide
4. Methane
5. Carbon dioxide



Permanent Gases

Column: DM-PLOT Q,

30 m x 0.32 mm x 10.00 μ m

Cat. No.: **8818**

Index: CSR00174L

Carrier Gas: H₂, 34 cm/sec

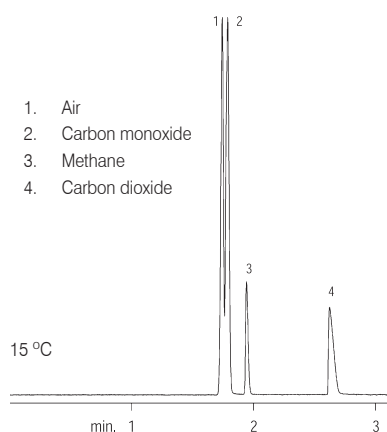
Injection Temp.: 15 °C

Split Ratio: 40:1

Sample Concentration: 2 - 5 mol %

Detector: TCD, 15 °C

1. Air
2. Carbon monoxide
3. Methane
4. Carbon dioxide



Permanent Gases

Column: DM-PLOT Q,

30 m x 0.32 mm x 10.00 μ m

Cat. No.: **8818**

Index: CSR00174R

Carrier Gas: H₂, 20 cm/sec

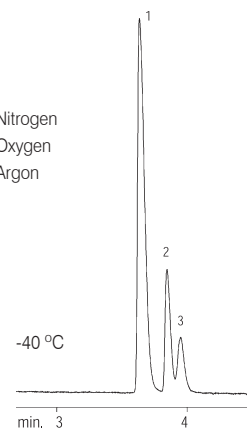
Injection Temp.: -40 °C

Split Ratio: 40:1

Sample Concentration: 2 - 5 mol %

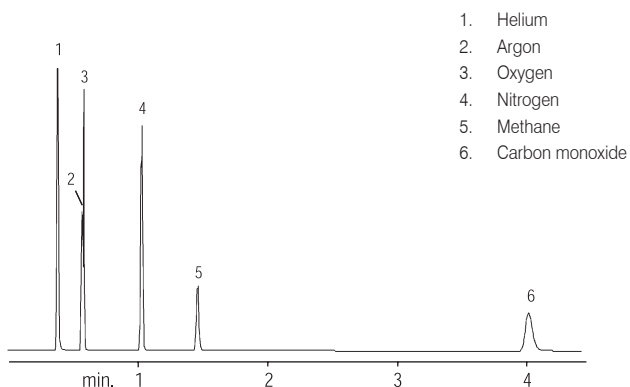
Detector: TCD, -40 °C

1. Nitrogen
2. Oxygen
3. Argon



Permanent Gases

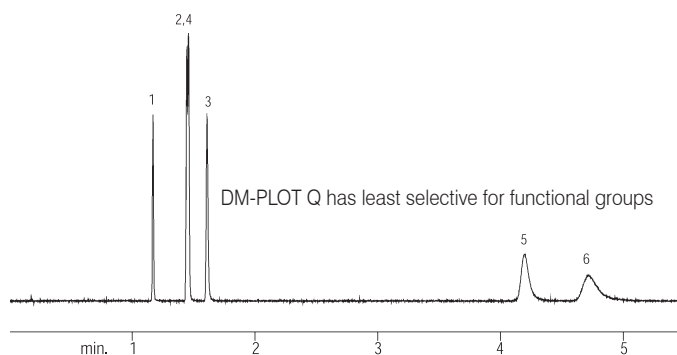
Column: DM-PLOT MS 5A, 30 m x 0.32 mm x 30.00 μ m
 Cat. No.: **8822**
 Index: CSR00165
 Oven Temp.: 70 $^{\circ}$ C
 Carrier Gas: H₂, 64 cm/sec
 Injection Temp.: Split, 70 $^{\circ}$ C
 Sample Concentration: 2 - 5 mol%, 20 μ L
 Detector: TCD, high sensitivity, 200 $^{\circ}$ C



Permanent Gases

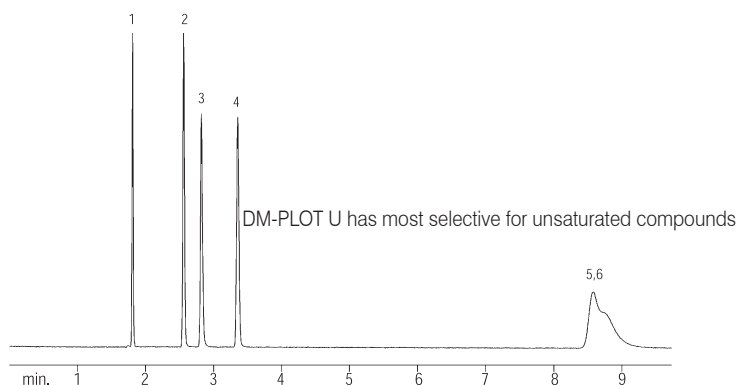
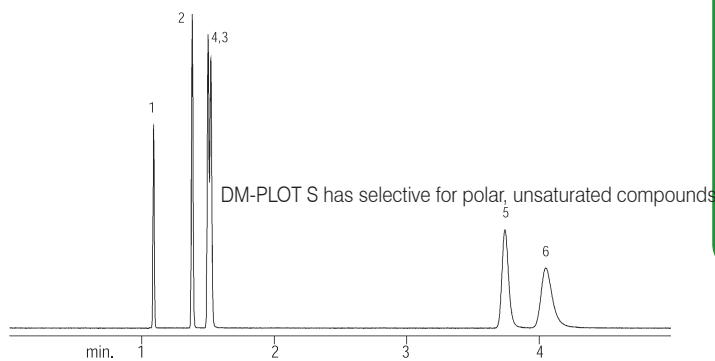
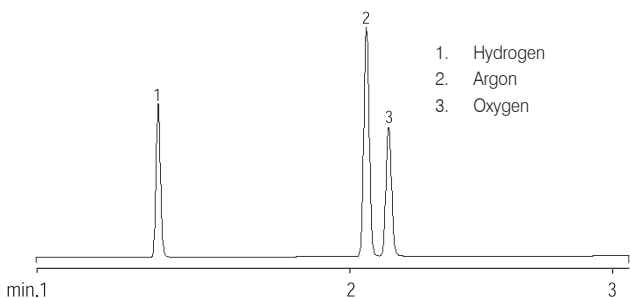
Column: DM-PLOT Q / DM-PLOT S / DM-PLOT U,
 30 m x 0.32 mm x 10.00 μ m
 Cat. No.: **8818 / 8810 / 8824**
 Index: CSR00180
 Oven Temp.: 50 $^{\circ}$ C
 Carrier Gas: H₂
 Injection: Split, 20:1, 200 $^{\circ}$ C
 Sample: 1000 ppm (v/v) in He, 100 μ L
 Detector: FID, 200 $^{\circ}$ C

1. Methane
2. Ethylene
3. Ethane
4. Acetylene
5. Propylene
6. Propane



Permanent Gases

Column: DM-PLOT MS 5A, 30 m x 0.53 mm x 20.00 μ m
 Cat. No.: **8823**
 Index: CSR00170
 Oven Temp.: 27 $^{\circ}$ C
 Carrier Gas: He, 34 cm/sec
 Injection: Sample loop, 0.5 mL
 Detector: Valco HID



Petrochemicals

Refinery Gas

Column: DM-PLOT Alumina / Na₂SO₄,
30 m x 0.53 mm x 10.00 μm

Sample: Refinery gas

Cat. No.: **8806**

Index: CSR01139

Injection: Split, 10 μL, 200 °C

Split Vent Flow Rate: 40 mL/min

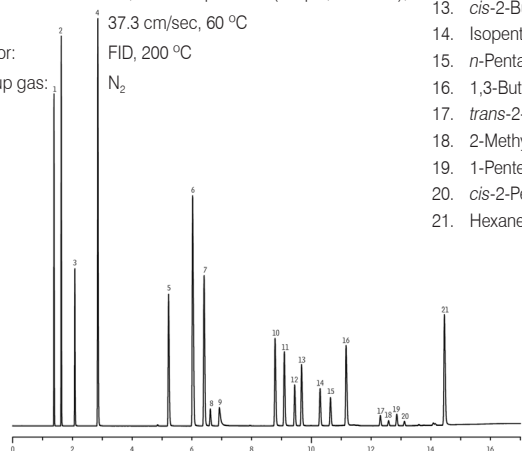
Oven Temp.: 60 °C (hold 2 min) to 200 °C (hold 1 min)
at 10 °C/min

Carrier Gas: He, constant pressure (5.0 psi, 34.5 kPa),
37.3 cm/sec, 60 °C

Detector: FID, 200 °C

Make up gas: N₂

1. Methane
2. Ethane
3. Ethylene
4. Propane
5. Propylene
6. Isobutane
7. *n*-Butane
8. Propadiene
9. Acetylene
10. *trans*-2-Butene
11. 1-Butene
12. Isobutylene
13. *cis*-2-Butene
14. Isopentane
15. *n*-Pentane
16. 1,3-Butadiene
17. *trans*-2-Pentene
18. 2-Methyl-2-butene
19. 1-Pentene
20. *cis*-2-Pentene
21. Hexanes



Impurity Analysis of 1,1,1,2-Tetrafluoroethane

Column: DM-PLOT CFC, 30 m x 0.53 mm x 10.00 μm

Cat. No.: **8859**

Index: CGR1155

Sample: 1,1,1,2-Tetrafluoroethane

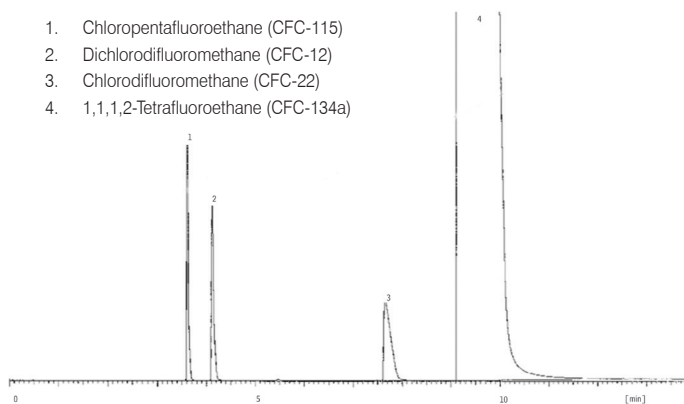
Injection: Split, 500 μL

Oven Temp.: 80 °C (hold 6 min) to 140 °C (hold 2 min) at 10 °C/min

Carrier Gas: He

Detector: FID

1. Chloropentafluoroethane (CFC-115)
2. Dichlorodifluoromethane (CFC-12)
3. Chlorodifluoromethane (CFC-22)
4. 1,1,1,2-Tetrafluoroethane (CFC-134a)



Natural Gas #2

Column: DM-PLOT QS, 30 m x 0.53 mm x 20.00 μm

Cat. No.: **8830**

Index: CSR01013

Oven Temp.: 40 °C (hold 2 min) to 225 °C (hold 5 min) at 20 °C/min

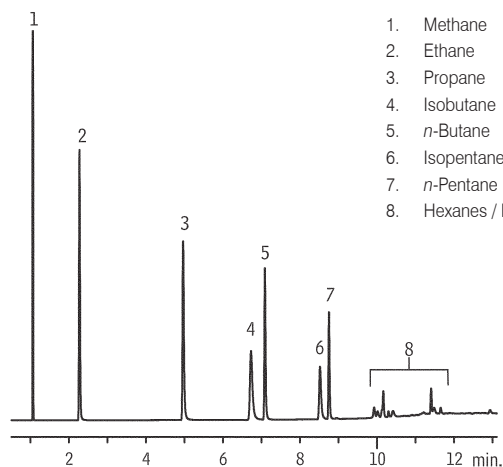
Carrier Gas: He, 5.7 mL/min

Injection: 20 μL split (split ratio 10:1), 240 °C

Sample: Natural gas mix (mol%)

Detector: FID, 240 °C

1. Methane
2. Ethane
3. Propane
4. Isobutane
5. *n*-Butane
6. Isopentane
7. *n*-Pentane
8. Hexanes / Hexenes



Butane Lighter Fluid

Column: DM-PLOT Alumina / KCl, 50 m x 0.53 mm x 10.00 μm

Cat. No.: **8813**

Index: CSR01086

Sample: Butane lighter fluid

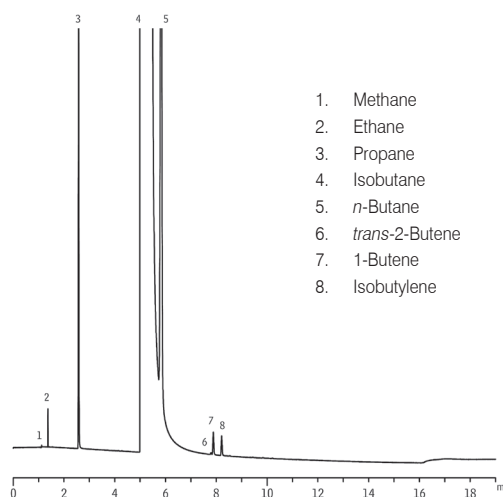
Injection: Valve, 100 μL, 200 °C

Oven Temp.: 45 °C (hold 1 min) to 200 °C (hold 3.5 min) at 10 °C/min

Carrier Gas: H₂, constant pressure (8.0 psi, 55.2 kPa) 74 cm/sec 45 °C

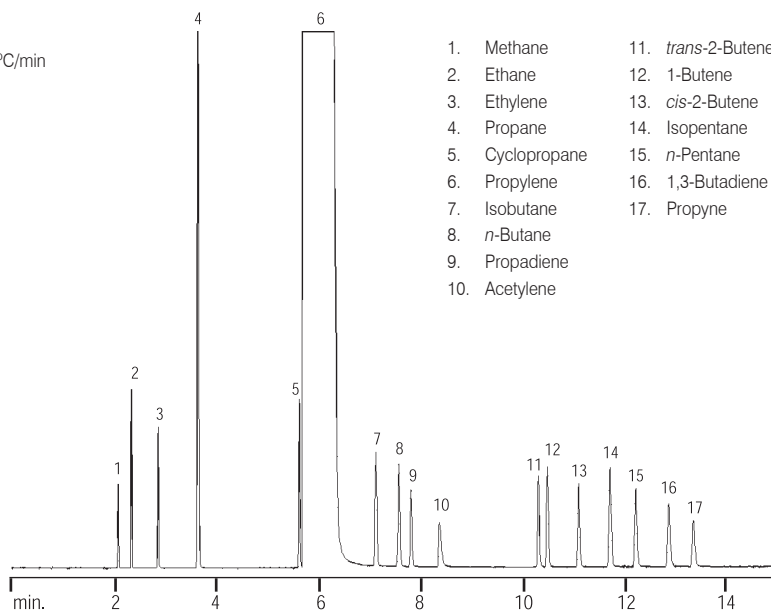
Detector: FID, 200 °C

1. Methane
2. Ethane
3. Propane
4. Isobutane
5. *n*-Butane
6. *trans*-2-Butene
7. 1-Butene
8. Isobutylene



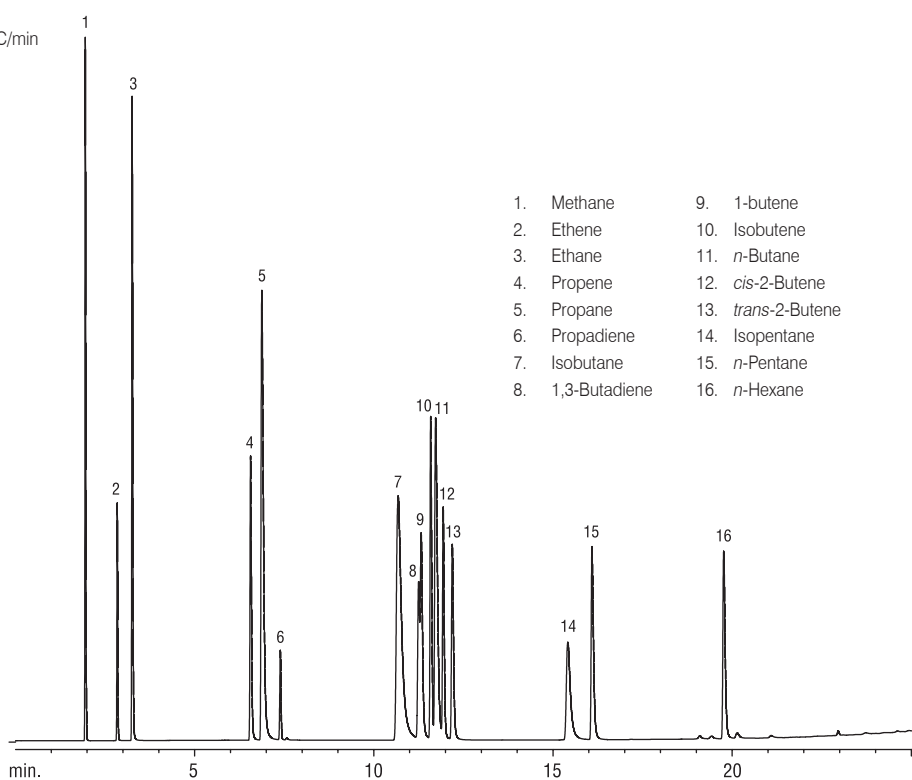
Propylene Purity

Column: DM-PLOT Alumina, 50 m x 0.53 mm x 6.00 μ m
 Cat. No.: 8801
 Index: CSR00185
 Oven Temp.: 40 °C (hold 3 min) to 120 °C (hold 5 min) at 10 °C/min
 Carrier Gas: He, 37.5 cm/sec, 80 °C
 Injection: Gas-tight syringe, 60 mL/min, 200 °C
 Sample: Hydrocarbons mix, 100 μ L
 Detector: FID, 1.28 x 10⁻¹⁰ AFS, 200 °C



Hydrocarbon Gases

Column: DM-PLOT Q, 30 m x 0.32 mm x 10.00 μ m
 Cat. No.: 8818
 Index: CSR00521
 Oven Temp.: 40 °C to 240 °C (hold 10 min) at 8 °C/min
 Carrier Gas: He, 35 cm/sec, 40 °C
 Injection: Split, 20:1, 250 °C
 Head Pressure: 18.0 psi
 Column flow rate: 1.5 mL/min, 40 °C
 Sample: Hydrocarbon gases mix, 30 μ L
 Detector: FID, 240 °C



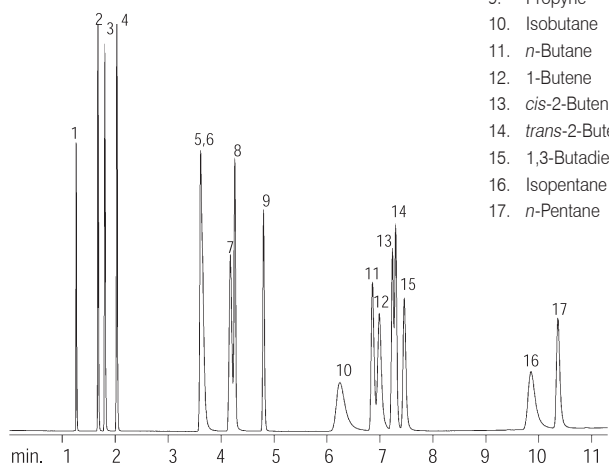
Applications

Petrochemicals

Hydrocarbon Gases

Column: DM-PLOT U, 30 m x 0.32 mm x 10.00 μ m
 Cat. No.: **8824**
 Index: CSR00177
 Oven Temp.: 50 °C to 190 °C at 10 °C/min
 Carrier Gas: He, 42 cm/sec, 80 °C
 Injection: Split, 300 μ L, 40 mL/min, 40:1, 250 °C
 Detector: FID, 1.28×10^{-10} AFS, 250 °C

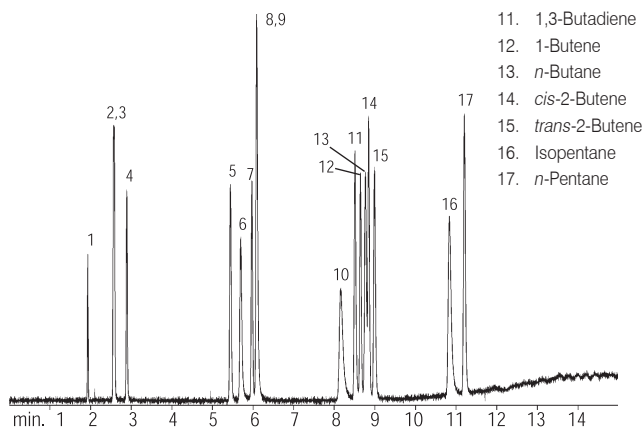
1. Methane
2. Ethylene
3. Ethane
4. Acetylene
5. Propane
6. Propylene
7. Cyclopropane
8. Propadiene
9. Propyne
10. Isobutane
11. *n*-Butane
12. 1-Butene
13. *cis*-2-Butene
14. *trans*-2-Butene
15. 1,3-Butadiene
16. Isopentane
17. *n*-Pentane



Hydrocarbon Gases

Column: DM-PLOT Q, 30 m x 0.32 mm x 10.00 μ m
 Cat. No.: **8818**
 Index: CSR00176
 Oven Temp.: 50 °C (hold 2 min) to 220 °C at 15 °C/min
 Carrier Gas: He, 42 cm/sec, 80 °C
 Injection: Split, 300 μ L, 40 mL/min, 40:1, 250 °C
 Detector: FID, 1.28×10^{-10} AFS, 250 °C

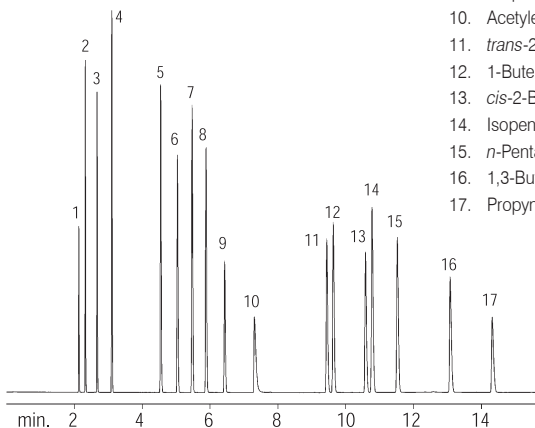
1. Methane
2. Ethylene
3. Acetylene
4. Ethane
5. Propylene
6. Propane
7. Cyclopropane
8. Propadiene
9. Propyne
10. Isobutane
11. 1,3-Butadiene
12. 1-Butene
13. *n*-Butane
14. *cis*-2-Butene
15. *trans*-2-Butene
16. Isopentane
17. *n*-Pentane



Refinery Gas

Column: DM-PLOT Alumina, 50 m x 0.53 mm x 6.00 μ m
 Cat. No.: **8801**
 Index: CSR00183
 Oven Temp.: 40 °C to 120 °C (hold 5 min) at 5 °C/min
 Carrier Gas: He, 37.5 cm/sec, 80 °C
 Injection: Split (gastight syringe) 60 mL/min, 200 °C
 Sample: Hydrocarbons mix, 100 μ L, 1,000 ppm
 Detector: FID, 1.28×10^{-10} AFS, 200 °C

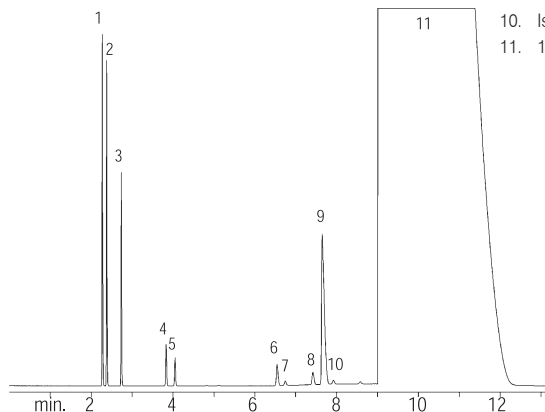
1. Methane
2. Ethane
3. Ethylene
4. Propane
5. Cyclopropane
6. Propylene
7. Isobutane
8. *n*-Butane
9. Propadiene
10. Acetylene
11. *trans*-2-Butene
12. 1-Butene
13. *cis*-2-Butene
14. Isopentane
15. *n*-Pentane
16. 1,3-Butadiene
17. Propyne



1,3-Butadiene Purity

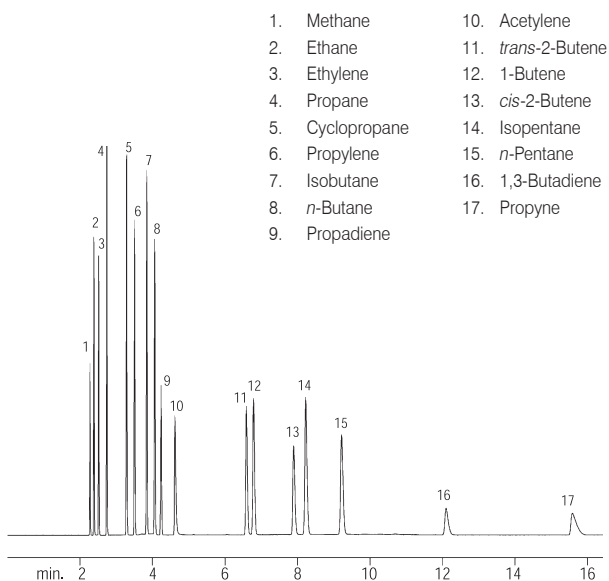
Column: DM-PLOT Alumina, 50 m x 0.53 mm x 6.00 μ m
 Cat. No.: **8801**
 Index: CSR00186
 Oven Temp.: 80 °C
 Carrier Gas: He, 42 cm/sec, 80 °C
 Injection: Gastight syringe, 40 mL/min, 200 °C
 Sample: 99+% 1,3-Butadiene, 500 μ L
 Detector: FID, 1.28×10^{-10} AFS, 200 °C

1. Methane
2. Ethane
3. Propane
4. Isobutane
5. *n*-Butane
6. *trans*-2-Butene
7. 1-Butene
8. Isobutylene
9. *cis*-2-Butene
10. Isopentane
11. 1,3-Butadiene



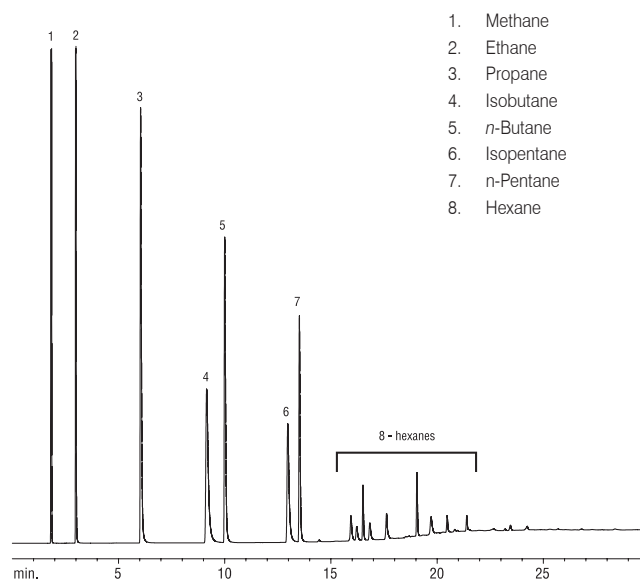
Hydrocarbons

Column: DM-PLOT Alumina, 50 m x 0.53 mm x 6.00 μ m
 Cat. No.: **8801**
 Index: CSR00551
 Oven Temp.: 80 $^{\circ}$ C
 Carrier Gas: He, 42 cm/sec, 80 $^{\circ}$ C
 Injection: Gastight syringe, 40 mL/min, 200 $^{\circ}$ C
 Sample: 200 μ L, 1,000 ppm
 Detector: FID, 1.28 x 10⁻¹⁰ AFS, 200 $^{\circ}$ C



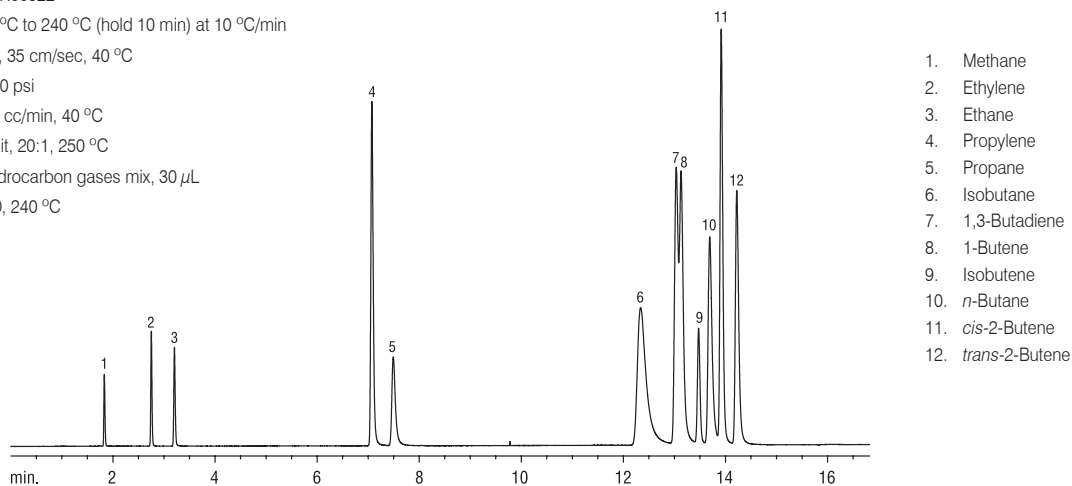
Hydrocarbon Gases

Column: DM-PLOT Q, 30 m x 0.32 mm x 10.00 μ m
 Cat. No.: **8818**
 Index: CSR00523
 Oven Temp.: 40 $^{\circ}$ C to 240 $^{\circ}$ C (hold 10 min) at 10 $^{\circ}$ C/min
 Carrier Gas: He, 35 cm/sec, 40 $^{\circ}$ C
 Head Pressure: 18.0 psi
 Column flow rate: 1.5 mL/min, 40 $^{\circ}$ C
 Injection: Split, 20:1, 250 $^{\circ}$ C
 Sample: Hydrocarbon gases mix, 30 μ L
 Detector: FID, 240 $^{\circ}$ C



Hydrocarbon Gases

Column: DM-PLOT Q, 30 m x 0.32 mm x 10.00 μ m
 Cat. No.: **8818**
 Index: CSR00522
 Oven Temp.: 35 $^{\circ}$ C to 240 $^{\circ}$ C (hold 10 min) at 10 $^{\circ}$ C/min
 Carrier Gas: He, 35 cm/sec, 40 $^{\circ}$ C
 Head Pressure: 18.0 psi
 Column flow rate: 1.5 cc/min, 40 $^{\circ}$ C
 Injection: Split, 20:1, 250 $^{\circ}$ C
 Sample: Hydrocarbon gases mix, 30 μ L
 Detector: FID, 240 $^{\circ}$ C



Petrochemicals

Petroleum Oxygenates

Column: DM-Wax, 30 m x 0.53 mm x 1.00 μ m

Cat. No.: 7551

Index: CSR00196

Oven Temp.: 45 °C (hold 4 min) to 220 °C at 6 °C/min

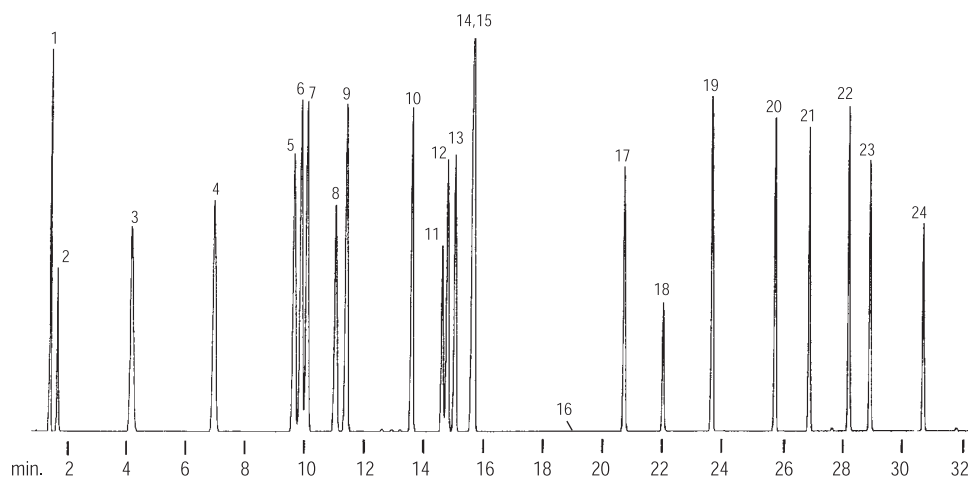
Carrier Gas: H₂, 40 cm/sec

Injection: Direct, 220 °C

Sample: Synthetic blend, 0.2 μ L, 15 - 30 ng/ μ L

Detector: FID, 16 x 10⁻¹¹ AFS, 220 °C

- | | | | |
|---------------------|------------------------------|------------------------------|------------------------------------|
| 1. Heptane | 7. <i>m</i> -Xylene | 13. <i>m</i> -Diethylbenzene | 19. Acetophenone |
| 2. C3 oxide | 8. Cumene | 14. α -Methylstyrene | 20. 2-Phenyl-2-propanol |
| 3. Benzene | 9. <i>o</i> -Xylene | 15. <i>o</i> -Diethylbenzene | 21. α -Methylbenzyl alcohol |
| 4. Toluene | 10. Styrene | 16. Phenylacetylene | 22. Benzyl alcohol |
| 5. Ethylbenzene | 11. 2-Methylpentanol | 17. Benzaldehyde | 23. Phenylethyl alcohol |
| 6. <i>p</i> -Xylene | 12. <i>p</i> -Diethylbenzene | 18. Monopropylene glycol | 24. Phenol |



Petroleum Oxygenates

Column: DM-TCEP, 60 m x 0.25 mm x 0.40 μ m

Cat. No.: 7809

Index: CSR00195

Oven Temp.: 60 °C (hold 5 min) to 100 °C (hold 10 min) at 5 °C/min

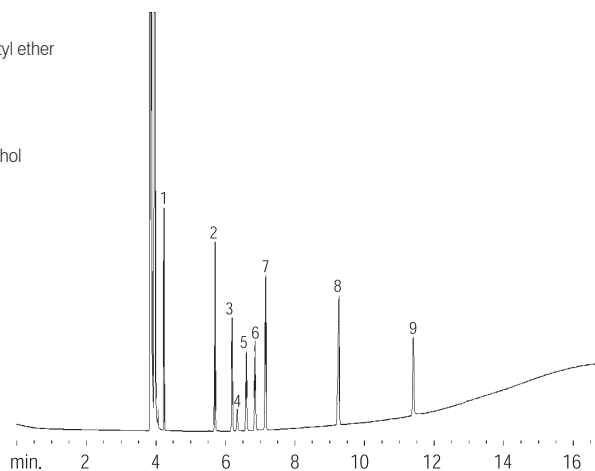
Carrier Gas: He, 30 cm/sec, 80 °C

Injection: Split, 46 mL/min, 200 °C

Sample: 1.0 μ L, 500 ppm

Detector: FID, 6.4 x 10⁻¹¹ AFS, 200 °C

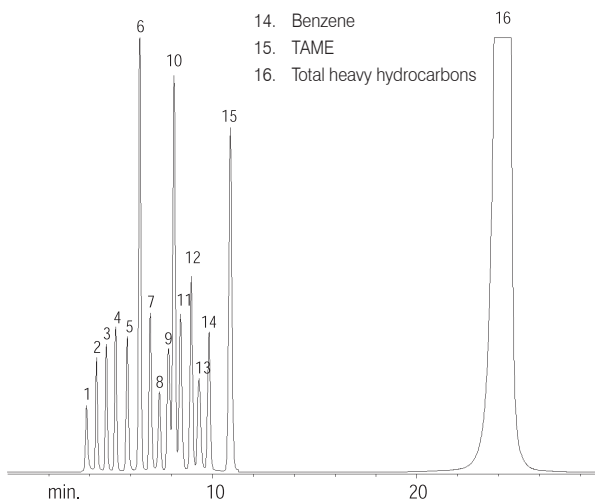
1. Methyl *tert*-butyl ether
2. *n*-Undecane
3. *tert*-Butanol
4. Methanol
5. Isopropyl alcohol
6. Ethanol
7. *n*-Dodecane
8. *n*-Tridecane
9. *n*-Butanol



Petroleum Oxygenates

Column: DM-1, 30 m x 0.53 mm x 3.00 μ m
 Cat. No.: 7155
 Index: CSR00194
 Oven Temp.: 60 °C
 Carrier Gas: He, 5 mL/min, 60 °C
 Injection: Split, 15:1, 200 °C
 Sample: Oxygenates blend 1 - 10 % wt in surrogate gasoline, 0.5 μ L
 Detector: FID, 250 °C

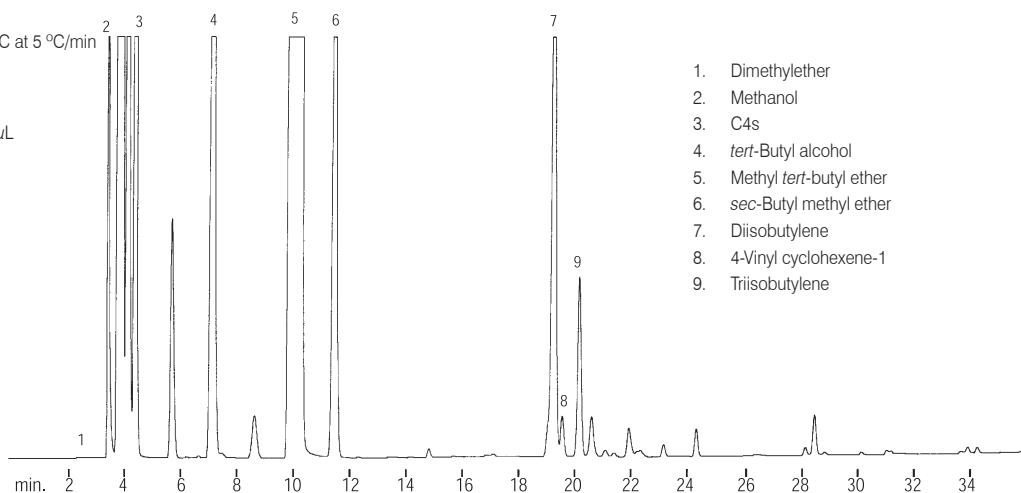
1. Methanol
2. Ethanol
3. Isopropanol
4. *tert*-butanol
5. *n*-Propanol
6. Methyl *tert*-butyl ether
7. *sec*-Butanol
8. DIPE
9. Isobutanol
10. Ethyl *tert*-butyl ether
11. *tert*-Amyl ether
12. Dimethoxyethane
13. *n*-Butanol
14. Benzene
15. TAME
16. Total heavy hydrocarbons



Oxygenates MTBE

Column: DM-1, 30 m x 0.53 mm x 5.00 μ m
 Cat. No.: 7157
 Index: CSR00197
 Oven Temp.: 40 °C (hold 8 min) to 200 °C at 5 °C/min
 Carrier Gas: H₂, 40 cm/sec
 Injection: Direct, 200 °C
 Sample: Methyl *tert*-butyl ether, 0.1 μ L
 Detector: FID, 8 x 10⁻¹¹ AFS, 200 °C

1. Dimethylether
2. Methanol
3. C4s
4. *tert*-Butyl alcohol
5. Methyl *tert*-butyl ether
6. *sec*-Butyl methyl ether
7. Diisobutylene
8. 4-Vinyl cyclohexene-1
9. Triisobutylene



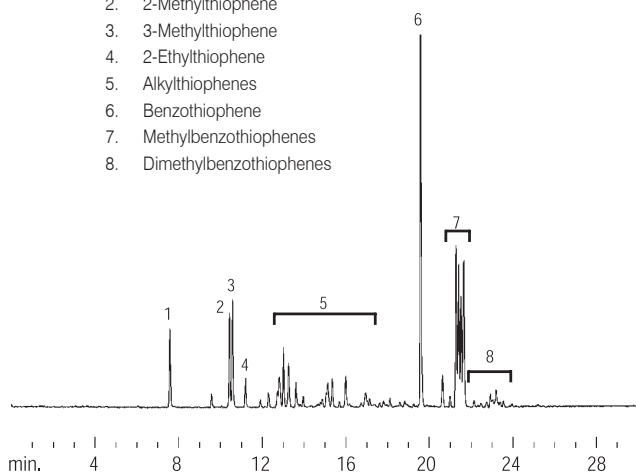
Applications

Petrochemicals

Sulfur in Gasoline

Column: DM-1, 30 m x 0.32 mm x 4.00 μ m
 Cat. No.: 7143
 Index: CSR00198
 Oven Temp.: 40 $^{\circ}$ C (hold 3 min) to 275 $^{\circ}$ C (hold 5 min) at 10 $^{\circ}$ C/min
 Carrier Gas: He, 70 cm/sec
 Injection: Split, 10:1, 275 $^{\circ}$ C
 Sample: Sulfur in gasoline, 1.0 μ L, 300 ppm
 Detector: SCD, 275 $^{\circ}$ C

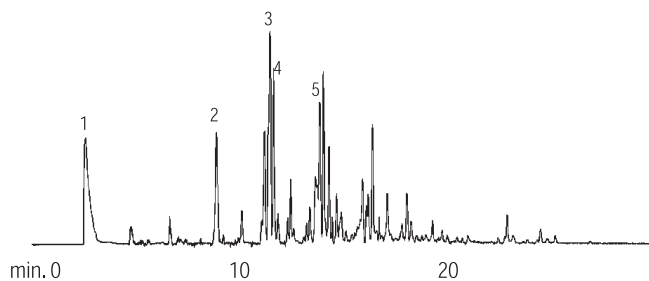
1. Thiophene
2. 2-Methylthiophene
3. 3-Methylthiophene
4. 2-Ethylthiophene
5. Alkylthiophenes
6. Benzothiophene
7. Methylbenzothiophenes
8. Dimethylbenzothiophenes



Sulfur in Naphtha

Column: DM-1, 30 m x 0.32 mm x 4.00 μ m
 Cat. No.: 7143
 Index: CSR00199
 Oven Temp.: 35 $^{\circ}$ C to 275 $^{\circ}$ C (hold 5 min) at 10 $^{\circ}$ C/min
 Carrier Gas: He, 24 cm/sec
 Injection: Split, 10:1, 275 $^{\circ}$ C
 Sample: Sulfur in naphtha, 1.0 μ L, 500 ppm
 Detector: AED, 181 nm, 275 $^{\circ}$ C

1. Hydrogen sulfide
2. Thiophene
3. 2-Methylthiophene
4. 3-Methylthiophene
5. 2-Ethylthiophene

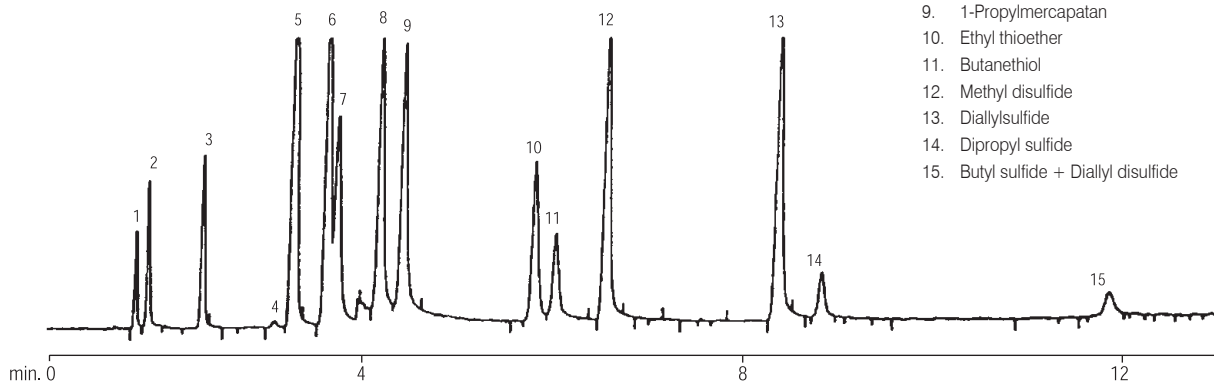


Applications

Sulfide

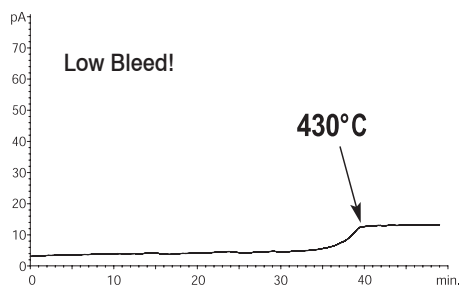
Column: DM-1, 60 m x 0.53 mm x 5.00 μ m
 Cat. No.: 7158
 Index: CSR00200
 Oven Temp.: 50 $^{\circ}$ C to 200 $^{\circ}$ C at 15 $^{\circ}$ C/min
 Carrier Gas: He, 30 cm/sec, 50 $^{\circ}$ C
 Injection: Direct, 50 $^{\circ}$ C
 Sample: Sulfide mix, 100 μ L
 Detector: FPD, 230 $^{\circ}$ C

1. Hydrogen sulfide
2. Sulfur dioxide + Carbonyl sulfide
3. Methanethiol
4. Ethanethiol
5. Carbon disulfide
6. Methyl sulfide
7. 2-Propylmercaptan
8. Allylmercaptan
9. 1-Propylmercaptan
10. Ethyl thioether
11. Butanethiol
12. Methyl disulfide
13. Diallylsulfide
14. Dipropyl sulfide
15. Butyl sulfide + Diallyl disulfide



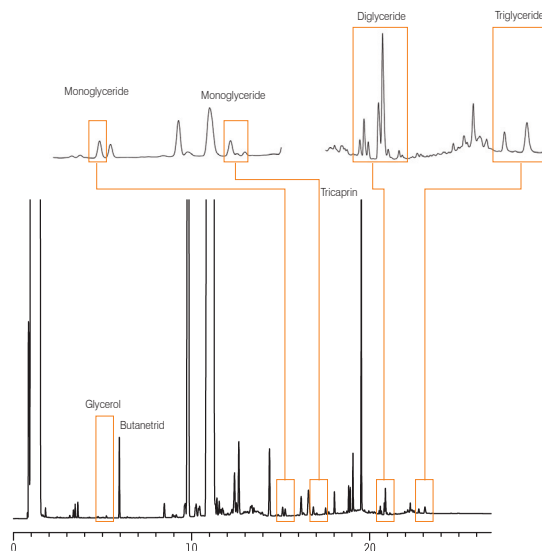
Bleed Profile

Column: DM-HT SimDist Metal, 5 m x 0.53 mm x 0.10 μ m
 Cat.No.: **7806**
 Index: CSR00527
 Oven Temp.: 40 °C to 430 °C (hold 30 min) at 10 °C/min
 Carrier Gas: He, 60 cm/sec
 Injection: On-column
 Flow Rate: 7.8 mL/min
 Head Pressure: 1.0 psi
 Detector: FID, 430 °C



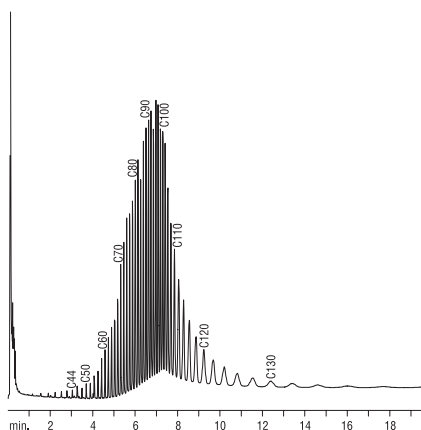
Glycerin in Biodiesel (ASTM D6584)

Column: DM-BDTG Metal, 14 m x 0.53 mm x 0.16 μ m (with 2 m Integra-Gap, total length 16 m)
 Cat. No.: **8864**
 Index: CSR00969
 Sample: Biodiesel (B100) in *n*-hexane
 Injection: 1 μ L cold on-column
 Oven Temp.: 50 °C (hold 1 min) to 180 °C at 15 °C/min to 230 °C at 7 °C/min, to 380 °C (hold 5 min) at 30 °C/min
 Carrier Gas: H₂, 4 mL/min
 Detector: FID, 380 °C



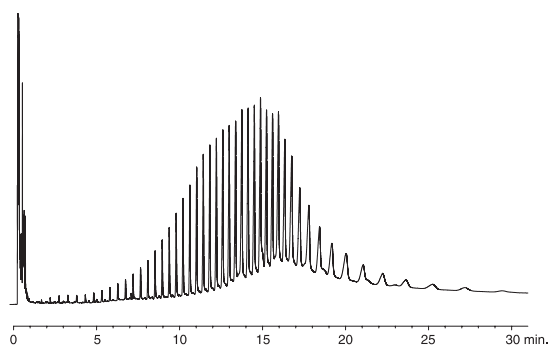
Hydrocarbons, C44 - C100

Column: DM-HT SimDist Metal, 5 m x 0.53 mm x 0.10 μ m
 Cat. No.: **7806**
 Index: CSR00543
 Solvent: Carbon disulfide
 Injection: On-column
 Oven Temp.: 40 °C to 430 °C (hold 30 min) at 60 °C/min
 Carrier Gas: H₂, 1.0 psi
 Sample: Polywax 1000, 0.2 μ L
 Detector: FID, 430 °C



Hydrocarbons, C44 - C100

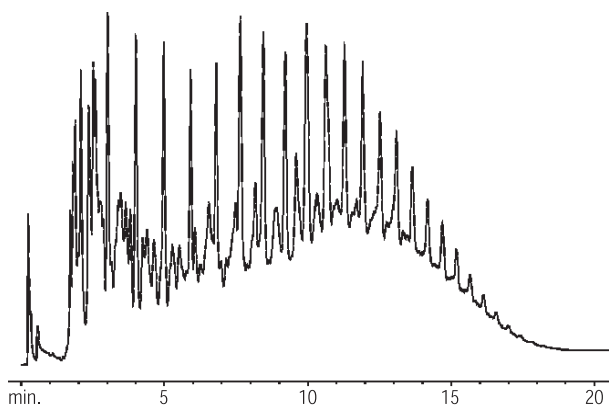
Column: DM-HT SimDist Metal, 5 m x 0.53 mm x 0.10 μ m
 Cat. No.: **7806**
 Index: CSR00531
 Injection: On-column, 0.2 μ L
 Oven Temp.: 40 °C to 430 °C (hold 25 min) at 60 °C/min
 Carrier Gas: He, 60 cm/sec, 1.0 psi
 Sample: Polywax 1000, 0.2 μ L
 Flow Rate: 7.8 mL/min
 Detector: FID, 430 °C



Petrochemicals

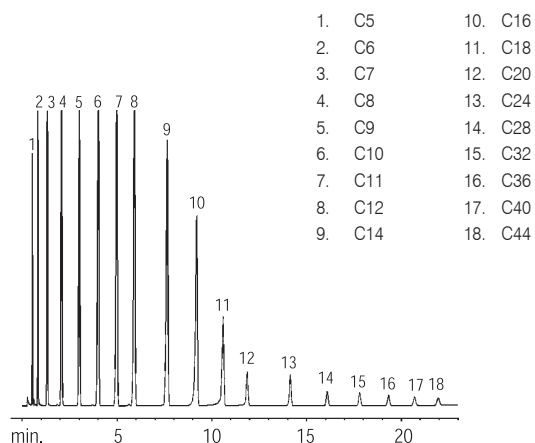
Simulated Distillation

Column: DM-2887, 10 m x 0.53 mm x 2.65 μ m
 Cat. No.: **7808**
 Index: CSR00227
 Oven Temp.: 35 $^{\circ}$ C to 360 $^{\circ}$ C (hold 5 min) at 15 $^{\circ}$ C/min
 Carrier Gas: N₂, 112 cm/sec
 Injection: Direct, 360 $^{\circ}$ C
 Sample: 0.1 - 0.01 wt% Hydrocarbon in CS₂ solvent, 1.0 μ L



Simulated Distillation

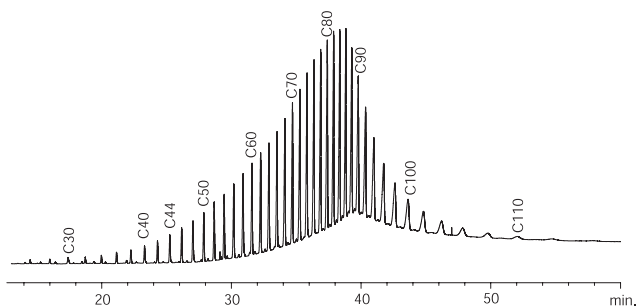
Column: DM-2887, 10 m x 0.53 mm x 2.65 μ m
 Cat. No.: **7808**
 Index: CSR00226
 Oven Temp.: 35 $^{\circ}$ C to 360 $^{\circ}$ C (hold 5 min) at 15 $^{\circ}$ C/min
 Carrier Gas: N₂, 112 cm/sec
 Injection: Direct, 360 $^{\circ}$ C
 Sample: 0.1 - 0.01 wt% Hydrocarbon in CS₂ solvent, 1.0 μ L



Applications

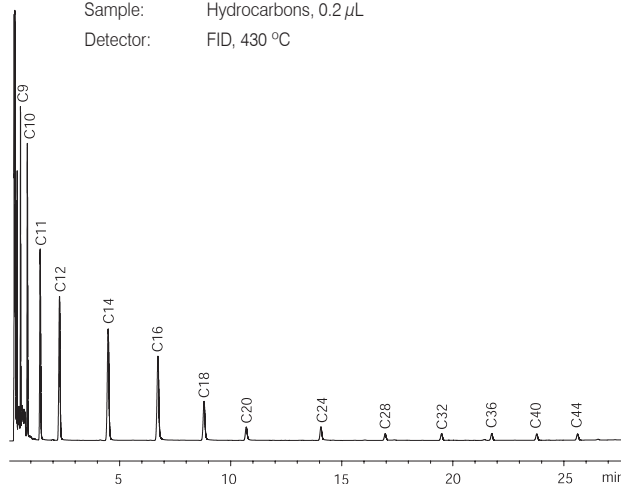
Hydrocarbons, C30 - C110

Column: DM-HT SimDist Metal, 5 m x 0.53 mm x 0.10 μ m
 Cat. No.: **7806**
 Index: CSR00530
 Oven Temp.: 40 $^{\circ}$ C to 430 $^{\circ}$ C (hold 30 min) at 10 $^{\circ}$ C/min
 Carrier Gas: He, 60 cm/sec
 Injection: On-column
 Flow Rate: 7.8 mL/min
 Head Pressure: 1.0 psi
 Solvent: CS₂
 Sample: Polywax 1000, 0.2 μ L
 Detector: FID, 430 $^{\circ}$ C



Hydrocarbons, C10 - C44

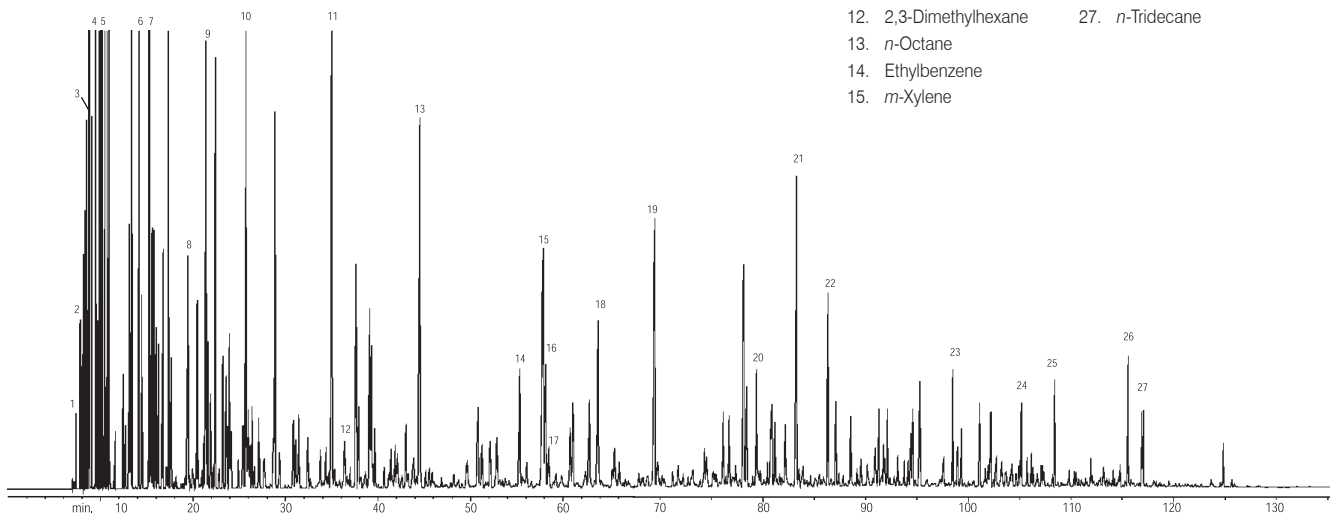
Column: DM-HT SimDist Metal, 5 m x 0.53 mm x 0.10 μ m
 Cat. No.: **7806**
 Index: CSR00529
 Oven Temp.: 40 $^{\circ}$ C to 430 $^{\circ}$ C (hold 30 min) at 10 $^{\circ}$ C/min
 Carrier Gas: He, 60 cm/sec
 Injection: On-column
 Flow Rate: 7.8 mL/min
 Head Pressure: 1.0 psi
 Solvent: CS₂
 Sample: Hydrocarbons, 0.2 μ L
 Detector: FID, 430 $^{\circ}$ C



Detailed Hydrocarbons Analysis

Column: DM-PONA, 100 m x 0.25 mm x 0.50 μ m
 Cat. No.: 7805
 Index: CSR00209
 Oven Temp.: 35 °C (hold 13 min) to 45 °C (hold 15 min) at 10 °C/min
 to 60 °C (hold 15 min) at 1 °C/min to 200 °C (hold 5 min) at 1.9 °C/min
 Carrier Gas: He, 24 cm/sec, 35 °C
 Injection: Split, 100:1, 250 °C
 Sample: Reformulated gasoline, 0.5 μ L
 Detector: FID, 4 x 10⁻¹² AFS, 250 °C

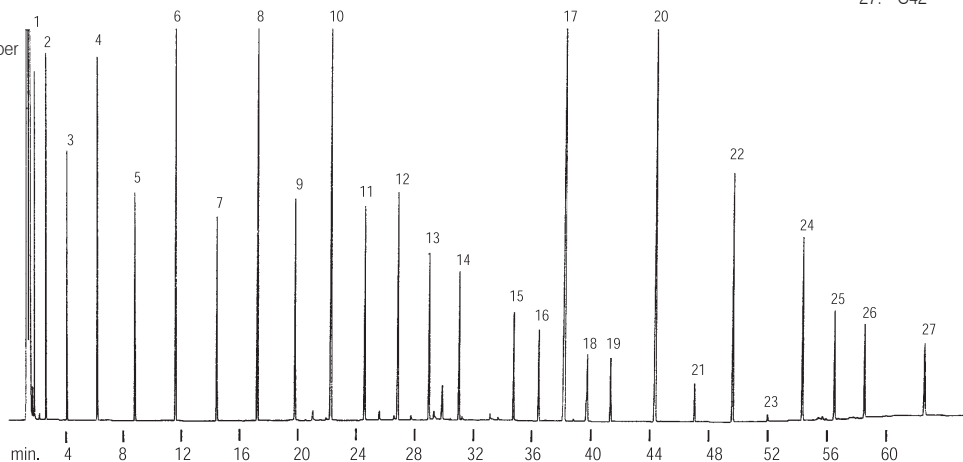
- | | |
|----------------------------------|----------------------------|
| 1. Propane | 16. <i>p</i> -Xylene |
| 2. <i>iso</i> -Butane / Methanol | 17. 2,3-Dimethylheptane |
| 3. <i>n</i> -Butane | 18. <i>o</i> -Xylene |
| 4. <i>iso</i> -Pentane | 19. <i>n</i> -Nonane |
| 5. <i>n</i> -Pentane | 20. 1,3,5-Trimethylbenzene |
| 6. 3-Methylpentane | 21. 1,2,4-Trimethylbenzene |
| 7. <i>n</i> -Hexane | 22. <i>n</i> -Decane |
| 8. Benzene | 23. <i>n</i> -Undecane |
| 9. 2-Methylhexane | 24. Naphthalene |
| 10. <i>n</i> -Heptane | 25. <i>n</i> -Dodecane |
| 11. Toluene | 26. 2-Methylnaphthalene |
| 12. 2,3-Dimethylhexane | 27. <i>n</i> -Tridecane |
| 13. <i>n</i> -Octane | |
| 14. Ethylbenzene | |
| 15. <i>m</i> -Xylene | |



Hydrocarbons, C7 - C42

Column: DM-1, 30 m x 0.25 mm x 0.10 μ m
 Cat. No.: 7119
 Index: CSR00216
 Oven Temp.: 40 °C to 340 °C at 5 °C/min
 Carrier Gas: H₂, 40 cm/sec, 40 °C
 Injection: Direct, 340 °C
 Sample: 0.2 μ L Injection of a synthetic hydrocarbons mix, 0.1 mg/mL per component
 Detector: FID, 64 x 10⁻¹¹ AFS, 340 °C

- | | | | | |
|--------|---------|---------|---------|---------|
| 1. C7 | 6. C12 | 11. C17 | 16. C23 | 21. C30 |
| 2. C8 | 7. C13 | 12. C18 | 17. C24 | 22. C32 |
| 3. C9 | 8. C14 | 13. C19 | 18. C25 | 23. C34 |
| 4. C10 | 9. C15 | 14. C20 | 19. C26 | 24. C36 |
| 5. C11 | 10. C16 | 15. C22 | 20. C28 | 25. C38 |
| | | | | 26. C40 |
| | | | | 27. C42 |



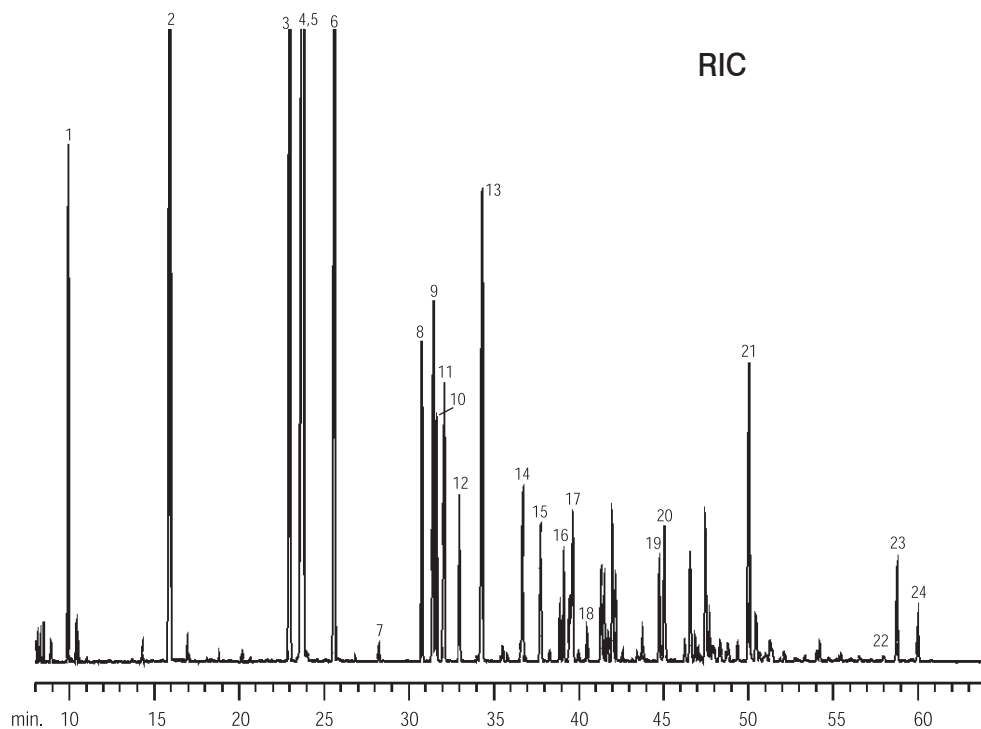
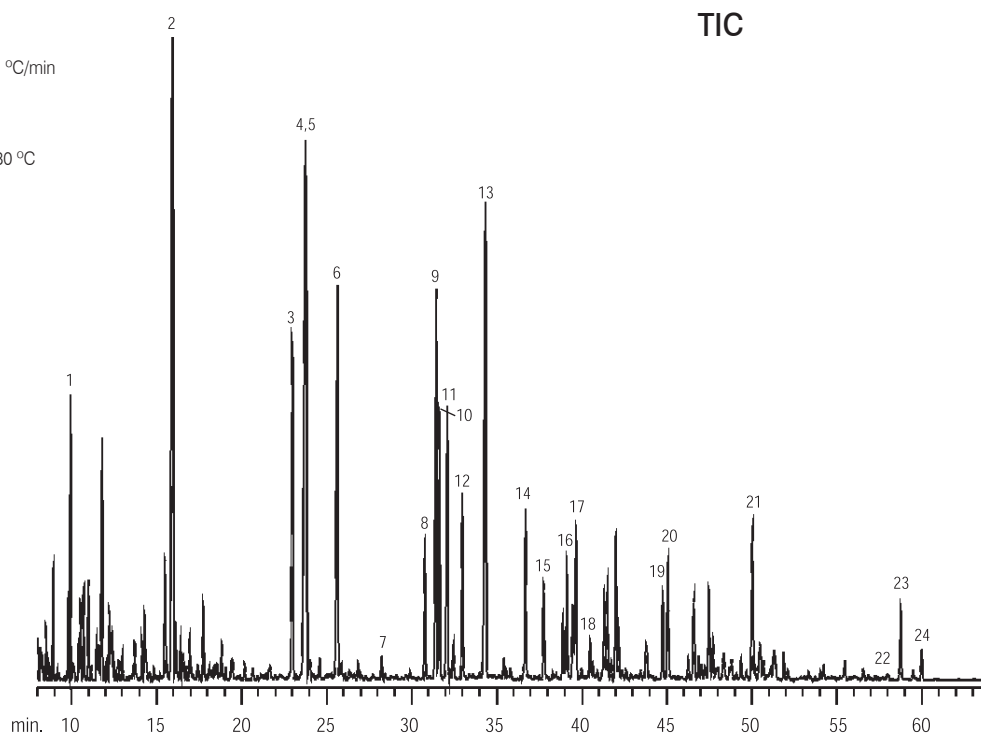
Applications

Petrochemicals

Gasoline Aromatics

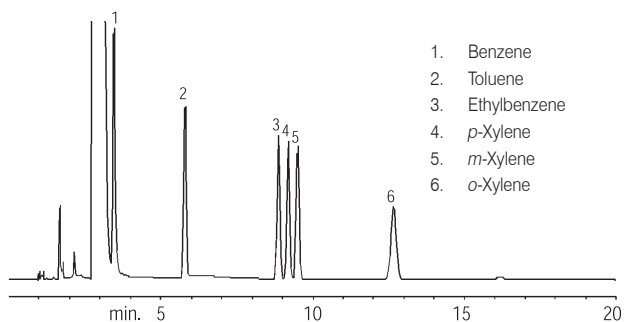
Column: DM-1, 60 m x 0.25 mm x 1.00 μ m
Cat. No.: 7126
Index: CSR00215
Oven Temp.: 50 $^{\circ}$ C (hold 1 min) to 190 $^{\circ}$ C at 2 $^{\circ}$ C/min
Injection: Split, 200:1, 250 $^{\circ}$ C
Sample: Neat gasoline, 1.0 μ L
Detector: MS, 45 - 300 m/e, 1 scan/sec, 280 $^{\circ}$ C

1. Benzene
2. Toluene
3. Ethylbenzene
4. *m*-Xylene
5. *p*-Xylene
6. *o*-Xylene
7. Isopropyl benzene
8. *n*-Propylbenzene
9. 1-Methyl-3-ethylbenzene
10. 1-Methyl-4-ethylbenzene
11. 1,3-Trimethylbenzene
12. 1-Methyl-2-ethylbenzene
13. 1,2,4-Trimethylbenzene
14. 1,2,3-Trimethylbenzene
15. Indane
16. 1,4-Diethylbenzene
17. Butylbenzene
18. 1,2-Diethylbenzene
19. 1,2,4,5-Tetramethylbenzene
20. 1,2,3,5-Tetramethylbenzene
21. Pentamethylbenzene
22. Naphthalene
23. 2-Methylnaphthalene
24. 1-Methylnaphthalene



Aromatics (Benzene / Toluene / Xylene)

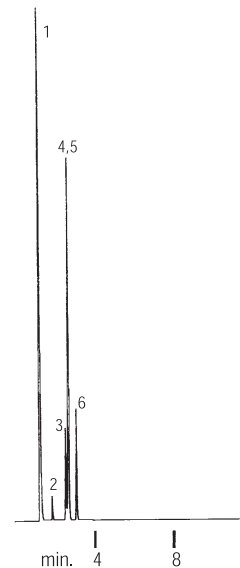
Column: DM-Wax, 30 m x 0.53 mm x 1.00 μ m
 Cat. No.: 7551
 Index: CSR00191
 Oven Temp.: 50 $^{\circ}$ C
 Carrier Gas: H₂, 40 cm/sec
 Injection: Direct, 250 $^{\circ}$ C
 Sample: Benzene, toluene, xylene, 0.1 μ L
 Detector: FID, 16 x 10⁻¹¹ AFS, 250 $^{\circ}$ C



1. Benzene
2. Toluene
3. Ethylbenzene
4. *p*-Xylene
5. *m*-Xylene
6. *o*-Xylene

Aromatics (Benzene / Toluene / Xylene)

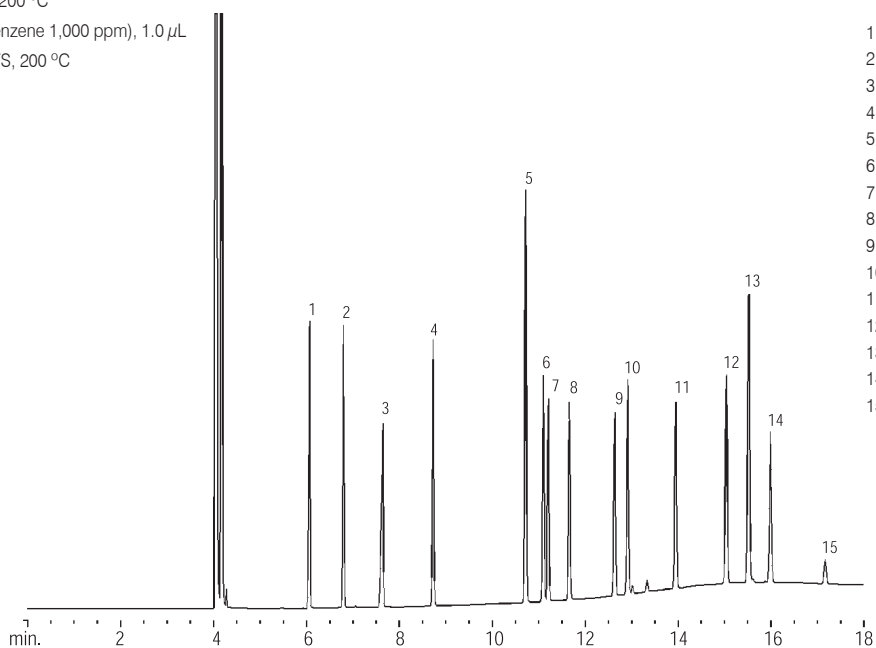
Column: DM-200, 30 m x 0.53 mm x 0.50 μ m
 Cat. No.: 8347
 Index: CSR00189
 Oven Temp.: 60 $^{\circ}$ C
 Carrier Gas: He, 40 cm/sec
 Injection: Direct, 250 $^{\circ}$ C
 Sample: Benzene, toluene, xylene standard, 0.1 μ L
 Detector: FID, 4 X 10⁻¹¹ AFS, 250 $^{\circ}$ C



1. Benzene
2. Toluene
3. Ethylbenzene
4. *m*-Xylene
5. *p*-Xylene
6. *o*-Xylene

Aromatics

Column: DM-TCEP, 60 m x 0.25 mm x 0.40 μ m
 Cat. No.: 7809
 Index: CSR00211
 Oven Temp.: 60 $^{\circ}$ C (hold 5 min) to 100 $^{\circ}$ C (hold 10 min) at 5 $^{\circ}$ C/min
 Carrier Gas: He, 30 cm/sec, 80 $^{\circ}$ C
 Injection: Split, 46 mL/min, 200 $^{\circ}$ C
 Sample: 500 ppm (Ethylbenzene 1,000 ppm), 1.0 μ L
 Detector: FID, 6.4 x 10⁻¹¹ AFS, 200 $^{\circ}$ C

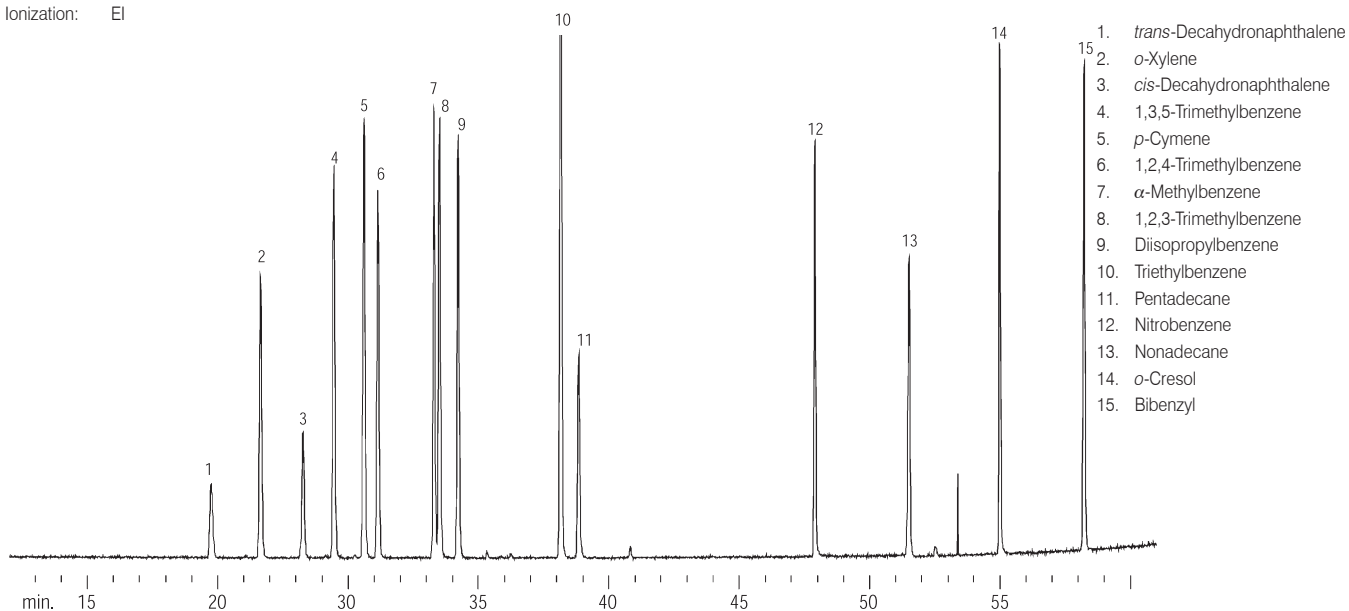


1. *n*-Undecane
2. Benzene
3. *n*-Dodecane
4. Toluene
5. Ethylbenzene
6. *p*-Xylene
7. *m*-Xylene
8. Cumene
9. *n*-Propylbenzene
10. *o*-Xylene
11. Mesitylene
12. 1-Ethyl-2-methylbenzene
13. *m*-Diethylbenzene
14. *p*-Diethylbenzene
15. *o*-Diethylbenzene

Applications

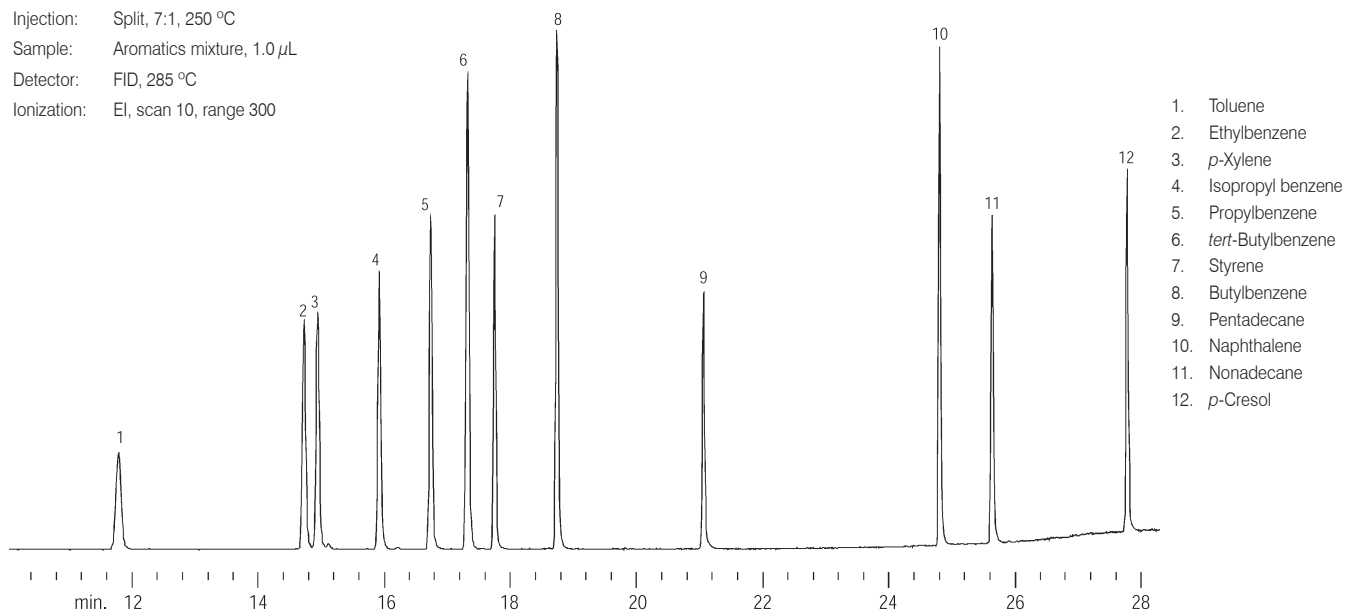
Petrochemicals

Column: DM-Wax, 60 m x 0.53 mm x 1.00 μ m
Cat. No.: 7552
Index: CCR00309
Oven Temp.: 40 $^{\circ}$ C (hold 10 min) to 245 $^{\circ}$ C (hold 20 min) at 4 $^{\circ}$ C/min
Carrier Gas: He, 50 cm/sec, 50 $^{\circ}$ C
Injection: Split, 7:1, 250 $^{\circ}$ C
Sample: Aromatics mixture, 1.0 μ L
Detector: MS, 280 $^{\circ}$ C
Ionization: EI



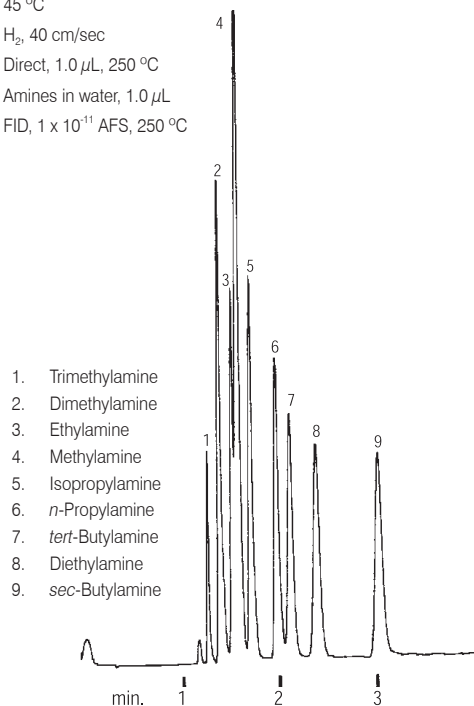
Aromatics

Column: DM-Wax, 60 m x 0.53 mm x 1.00 μ m
Cat. No.: 7552
Index: CCR00311
Oven Temp.: 45 $^{\circ}$ C (hold 10 min) to 250 $^{\circ}$ C (hold 20 min) at 12 $^{\circ}$ C/min
Carrier Gas: He, 50 cm/sec, 50 $^{\circ}$ C
Injection: Split, 7:1, 250 $^{\circ}$ C
Sample: Aromatics mixture, 1.0 μ L
Detector: FID, 285 $^{\circ}$ C
Ionization: EI, scan 10, range 300



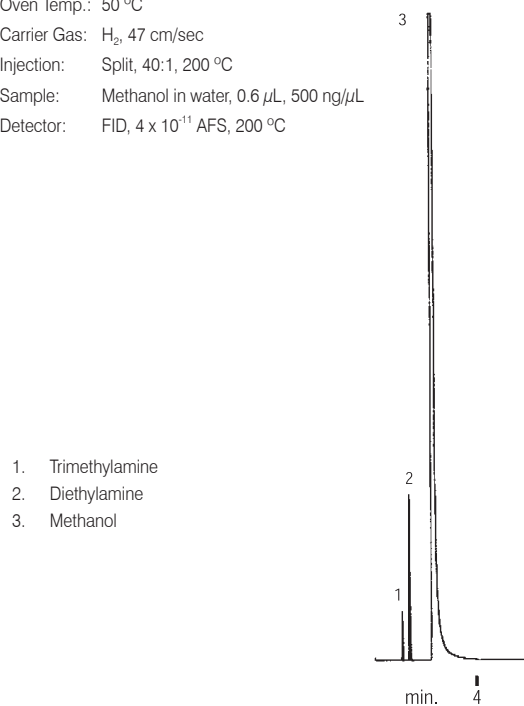
Primary Amines (Low MW)

Column: DM-Wax Amine, 30 m x 0.53 mm x 1.00 μ m
 Cat. No.: 7833
 Index: CCR00304
 Oven Temp.: 45 $^{\circ}$ C
 Carrier Gas: H₂, 40 cm/sec
 Injection: Direct, 1.0 μ L, 250 $^{\circ}$ C
 Sample: Amines in water, 1.0 μ L
 Detector: FID, 1 x 10⁻¹¹ AFS, 250 $^{\circ}$ C



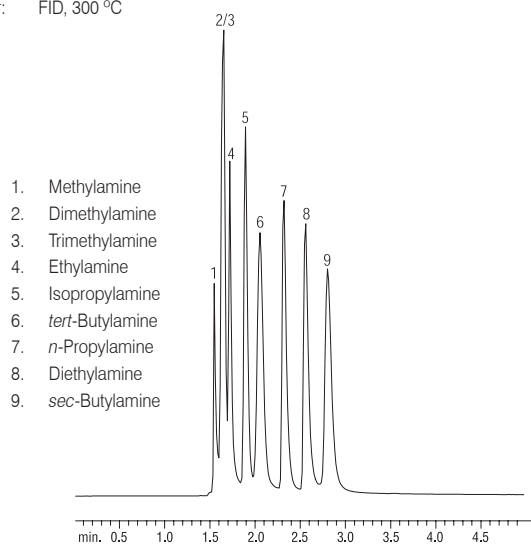
Amines (Low MW)

Column: DM-Wax Amine, 30 m x 0.53 mm x 1.00 μ m
 Cat. No.: 7833
 Index: CCR00305
 Oven Temp.: 50 $^{\circ}$ C
 Carrier Gas: H₂, 47 cm/sec
 Injection: Split, 40:1, 200 $^{\circ}$ C
 Sample: Methanol in water, 0.6 μ L, 500 ng/ μ L
 Detector: FID, 4 x 10⁻¹¹ AFS, 200 $^{\circ}$ C



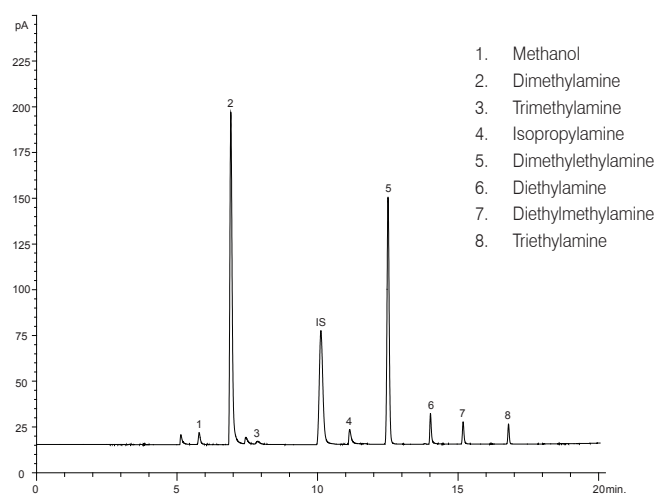
Primary Amines

Column: DM-35 Amine, 30 m x 0.53 mm x 1.00 μ m
 Cat. No.: 7825
 Index: CCR00578
 Oven Temp.: 35 $^{\circ}$ C (hold 5 min)
 Carrier Gas: He, 35.7 cm/sec constant pressure
 Injection: Split, 10:1
 Sample: Primary amines in water, 50 ppm, 1.0 μ L
 Detector: FID, 300 $^{\circ}$ C



Short Chain Amines in Water

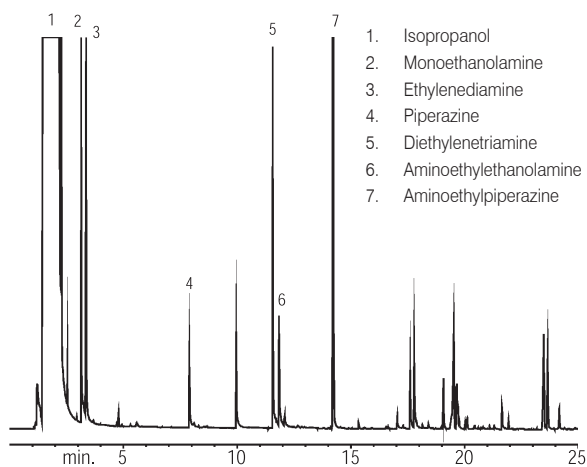
Column: DM-Volatile Amine, 60 m x 0.32 mm
 Cat. No.: 8857
 Index: CGN1154
 Sample: 200 - 1,000 ppm Short chain amines in water
 Injection: Split, 15:1, 1.0 μ L, 220 $^{\circ}$ C
 Oven Temp.: 40 $^{\circ}$ C (hold 10 min) to 250 $^{\circ}$ C (hold 10 min) at 20 $^{\circ}$ C/min
 Carrier Gas: H₂, 2.0 mL/min, 35 cm/sec, 40 $^{\circ}$ C
 Detector: FID, 250 $^{\circ}$ C



Amines

Ethylenediamines

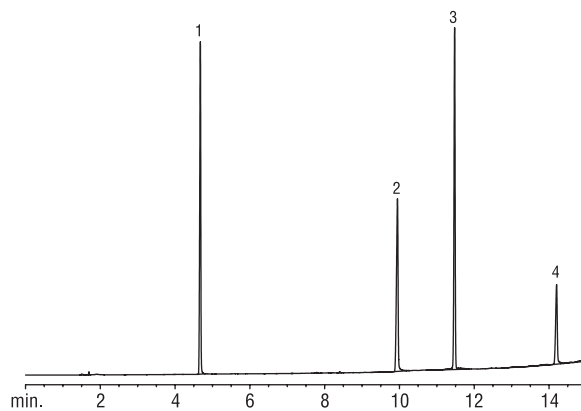
Column: DM-5 Amine, 30 m x 0.25 mm x 0.50 μ m
 Cat. No.: 7815
 Index: CCR00298
 Oven Temp.: 40 °C (hold 4 min) to 315 °C (hold 5 min) at 10 °C/min
 Carrier Gas: H₂, 43 cm/sec, 40 °C
 Injection: Split, 20:1, 315 °C
 Sample: Ethylenediamines, 3.0 μ L, 5 – 80 ng
 Detector: FID, 6.4 x 10⁻¹¹ AFS, 315 °C



Ethanolamines

Column: DM-35 Amine, 30 m x 0.32 mm x 1.00 μ m
 Cat. No.: 7823
 Index: CCR00585
 Oven Temp.: 50 °C (hold 0.5 min) to 280 °C at 15 °C/min
 Carrier Gas: He, 40 cm/sec constant pressure, 50 °C
 Injection: Split, 10:1, 300 °C
 Sample: 500 μ g/mL Ethanolamines standard in water, 1.0 μ L
 Detector: FID, 300 °C

1. Monoethanolamine
2. Diethanolamine
3. Triethylene glycol monomethylether
4. Triethanolamine

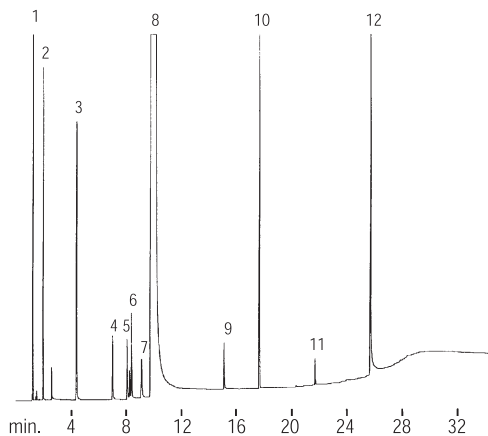


Hexamethylenediamine

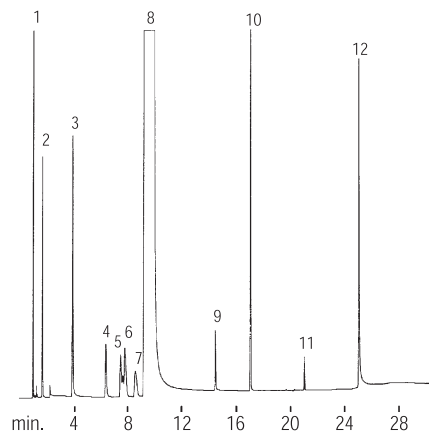
Column: DM-Wax Amine, 30 m x 0.32 mm x 0.25 μ m
 Cat. No.: 7829
 Index: CCR00302
 Oven Temp.: 95 °C (hold 6 min) to 235 °C (hold 4 min) at 7 °C/min
 Carrier Gas: H₂, 40 cm/sec
 Injection: Direct, 250 °C
 Sample: Hexamethylenediamine, 0.4 μ L, 10 - 100 ng
 Detector: FID, 2 x 10⁻¹¹ AFS, 250 °C

V.S.

Column: DM-Wax Amine, 30 m x 0.53 mm x 0.50 μ m
 Cat. No.: 7837
 Index: CCR00303
 Oven Temp.: 95 °C (hold 6 min) to 235 °C (hold 2 min) at 7 °C/min
 Carrier Gas: H₂, 40 cm/sec
 Injection: Direct, 255 °C
 Sample: Hexamethylenediamine, 0.2 μ L
 Detector: FID, 64 x 10⁻¹¹, 255 °C

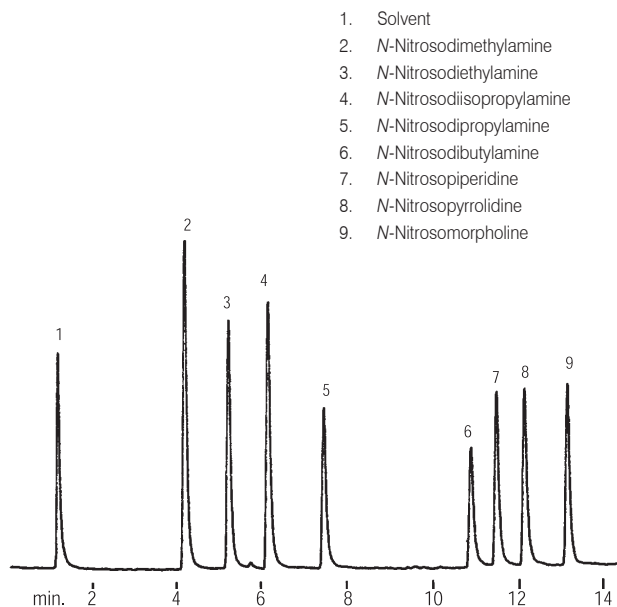


1. Cyclohexane
2. Hexamethyleneimine
3. 1,4-Diaminobutane
4. Pentamethylenediamine
5. 1,2-Diaminocyclohexane
6. 1,5-Diamino-2-Methylpentane
7. Aminomethylcyclopentylamine
8. Hexamethylenediamine
9. 6-Aminocapronitrile
10. *n*-Valeramide
11. Adiponitrile
12. *bis*-Hexamethylenetriamine



Nitrosamines

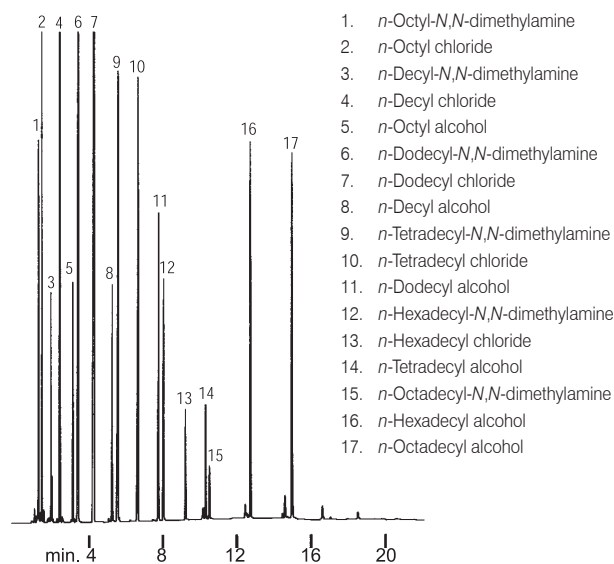
Column: DM-Wax Amine, 60 m x 0.53 mm x 1.00 μ m
 Cat. No.: 7836
 Index: CCR00306
 Oven Temp.: 100 °C (hold 1 min) to 170 °C at 5 °C/min
 Carrier Gas: He, 100 cm/sec
 Injection: Direct, 200 °C
 Sample: Nitrosamines, 1.0 μ g/mL
 Detector: TSD, 200 °C



1. Solvent
2. *N*-Nitrosodimethylamine
3. *N*-Nitrosodiethylamine
4. *N*-Nitrosodiisopropylamine
5. *N*-Nitrosodipropylamine
6. *N*-Nitrosodibutylamine
7. *N*-Nitrosopiperidine
8. *N*-Nitrosopyrrolidine
9. *N*-Nitrosomorpholine

Amines / Alcohols / Chlorides

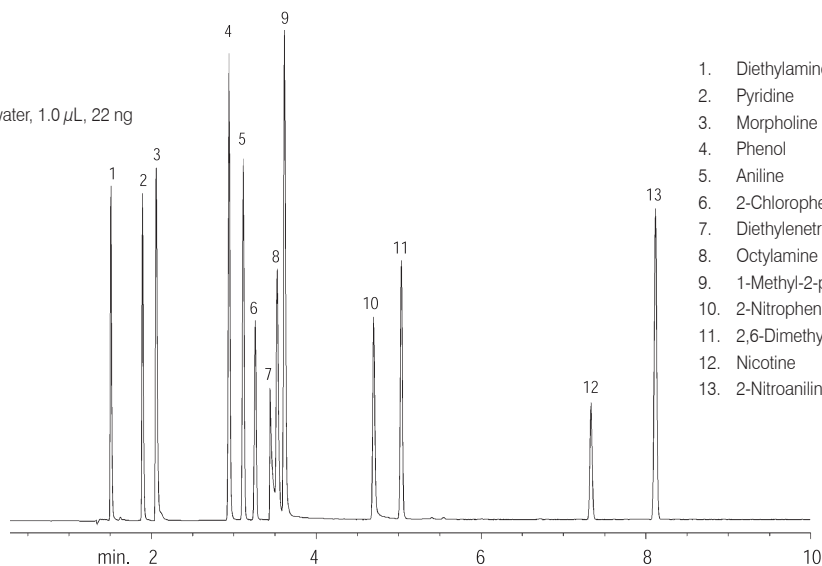
Column: DM-Wax, 30 m x 0.53 mm x 0.50 μ m
 Cat. No.: 7547
 Index: CCR00307
 Oven Temp.: 100 °C to 250 °C (hold 5 min) at 8 °C/min
 Carrier Gas: H₂, 40 cm/sec
 Injection: Split, 40:1, 250 °C
 Sample: Mix, 0.5 μ L
 Detector: FID, 128 x 10⁻¹¹ AFS, 250 °C



1. *n*-Octyl-*N,N*-dimethylamine
2. *n*-Octyl chloride
3. *n*-Decyl-*N,N*-dimethylamine
4. *n*-Decyl chloride
5. *n*-Octyl alcohol
6. *n*-Dodecyl-*N,N*-dimethylamine
7. *n*-Dodecyl chloride
8. *n*-Decyl alcohol
9. *n*-Tetradecyl-*N,N*-dimethylamine
10. *n*-Tetradecyl chloride
11. *n*-Dodecyl alcohol
12. *n*-Hexadecyl-*N,N*-dimethylamine
13. *n*-Hexadecyl chloride
14. *n*-Tetradecyl alcohol
15. *n*-Octadecyl-*N,N*-dimethylamine
16. *n*-Hexadecyl alcohol
17. *n*-Octadecyl alcohol

Amines / Phenols

Column: DM-5 Amine, 30 m x 0.32 mm x 1.00 μ m
 Cat. No.: 7817
 Index: CCR00301
 Oven Temp.: 120 °C to 220 °C at 10 °C/min
 Carrier Gas: H₂, 38 cm/sec, 120 °C
 Injection: Split, 25:1, 305 °C
 Sample: Miscellaneous amines and phenols in water, 1.0 μ L, 22 ng
 Detector: FID, 6.4 x 10⁻¹¹ AFS, 305 °C



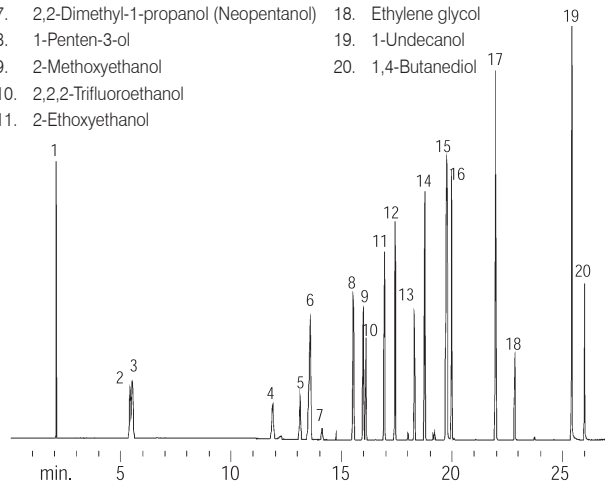
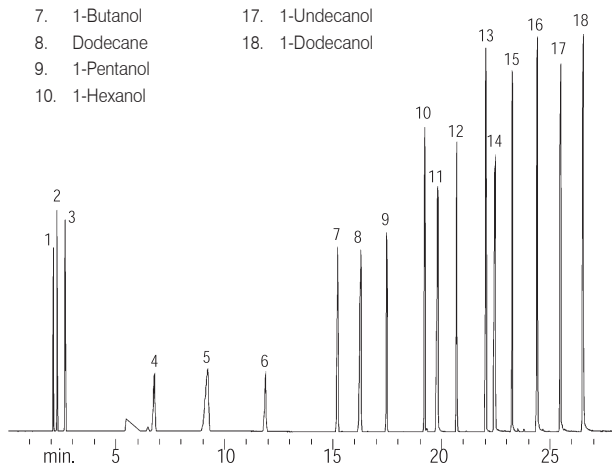
1. Diethylamine
2. Pyridine
3. Morpholine
4. Phenol
5. Aniline
6. 2-Chlorophenol
7. Diethylenetriamine
8. Octylamine
9. 1-Methyl-2-pyrrolidinone
10. 2-Nitrophenol
11. 2,6-Dimethylaniline
12. Nicotine
13. 2-Nitroaniline

Alcohols

Column: DM-Wax, 60 m x 0.53 mm x 1.00 μ m
 Cat. No.: 7552
 Index: CCR00288
 Oven Temp.: 45 $^{\circ}$ C (hold 10 min) to 250 $^{\circ}$ C (hold 20 min) at 12 $^{\circ}$ C/min
 Carrier Gas: He, 51 cm/sec, 50 $^{\circ}$ C
 Injection: Split, 8:1, 250 $^{\circ}$ C
 Sample: Alcohols, 1.0 μ L
 Detector: MS, 250 $^{\circ}$ C
 Ionization: EI

- | | |
|---------------|-----------------|
| 1. Pentane | 11. Tetradecane |
| 2. Hexane | 12. 1-Heptanol |
| 3. Heptane | 13. 1-Octanol |
| 4. Ethanol | 14. Hexadecane |
| 5. Decane | 15. 1-Nonanol |
| 6. 1-Propanol | 16. 1-Decanol |
| 7. 1-Butanol | 17. 1-Undecanol |
| 8. Dodecane | 18. 1-Dodecanol |
| 9. 1-Pentanol | |
| 10. 1-Hexanol | |

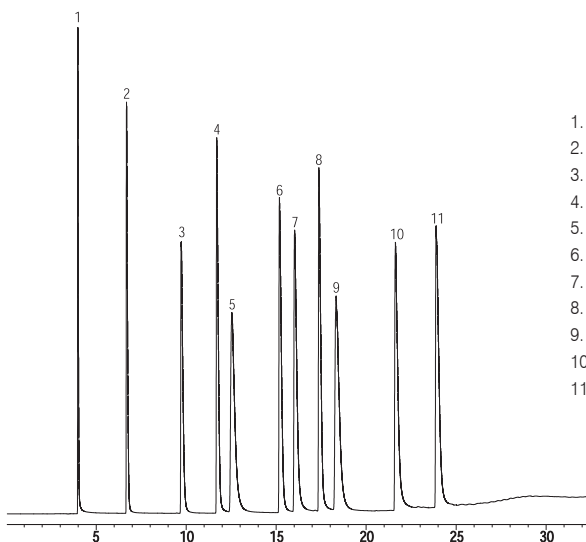
- | | |
|---|--------------------------------|
| 1. Pentane | 12. 1-Pentanol |
| 2. Methanol | 13. 2-Methyl-1-pentanol |
| 3. 2-Methyl-2-propanol (<i>tert</i> -Butylalcohol) | 14. 2,2-Dimethyl-1-pentanol |
| 4. 2-Methyl-3-buten-2-ol | 15. Tetradecane |
| 5. 3-Buten-2-ol | 16. <i>trans</i> -2-Hexen-1-ol |
| 6. Undecane | 17. 1-Octanol |
| 7. 2,2-Dimethyl-1-propanol (Neopentanol) | 18. Ethylene glycol |
| 8. 1-Penten-3-ol | 19. 1-Undecanol |
| 9. 2-Methoxyethanol | 20. 1,4-Butanediol |
| 10. 2,2,2-Trifluoroethanol | |
| 11. 2-Ethoxyethanol | |



Applications

Alcohols

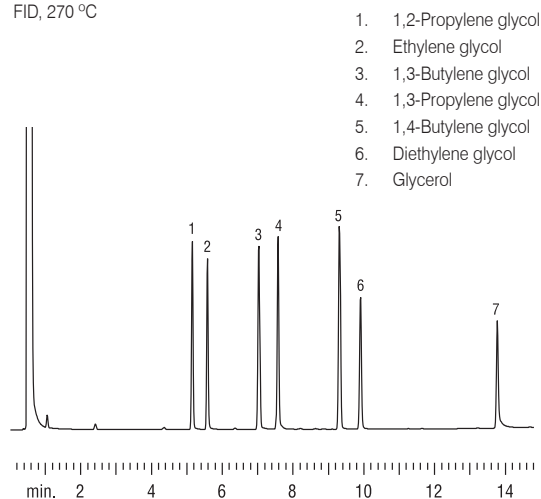
Column: DM-PLOT Q, 30 m x 0.32 mm x 10.00 μ m
 Cat. No.:
 Index: CCR00495
 Oven Temp.: 100 $^{\circ}$ C to 240 $^{\circ}$ C (hold 10 min) at 5 $^{\circ}$ C/min
 Carrier Gas: He, 31 cm/sec, 100 $^{\circ}$ C
 Head Pressure: 18.0 psi
 Column Flow Rate: 1.1 cc/min, 100 $^{\circ}$ C
 Injection: Split, 70:1, 250 $^{\circ}$ C
 Sample: Alcohols, 1.0 μ L
 Detector: FID, 270 $^{\circ}$ C



- | |
|-------------------------|
| 1. Methanol |
| 2. Ethanol |
| 3. 2-Propanol |
| 4. 1-Propanol |
| 5. <i>tert</i> -Butanol |
| 6. 2-Butanol |
| 7. Isobutyl alcohol |
| 8. 1-Butanol |
| 9. 2-Methyl-2-butanol |
| 10. 3-Methyl-1-butanol |
| 11. 4-Methyl-2-pentanol |

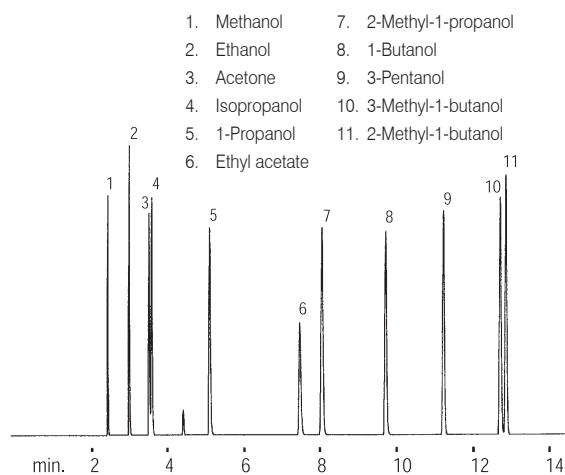
Glycols

Column: DM-Wax, 30 m x 0.53 mm x 1.00 μ m
 Cat. No.: 7551
 Index: CER00476
 Oven Temp.: 80 °C to 200 °C (hold 10 min) at 8 °C/min
 Solvent: H₂O:MeOH = 50:50
 septa purge 5.0 cc/min
 Carrier Gas: He, 50 cm/sec
 Injection: Direct
 Flow Rate: 6.9 mL/min
 Sample: Glycol mix, 1.0 μ L, 150 ppm
 Detector: FID, 270 °C



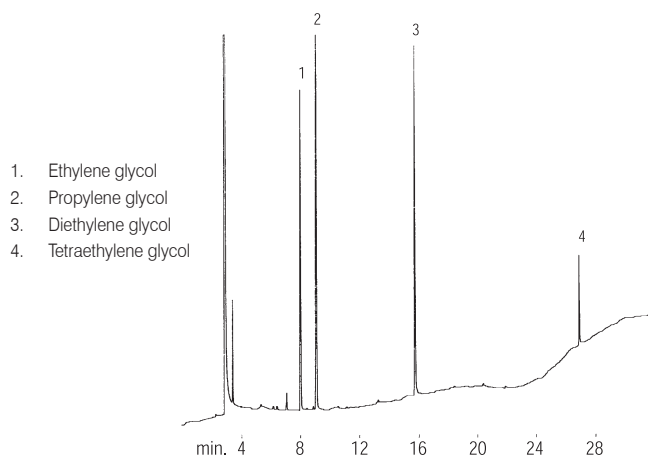
Alcohols

Column: DM-5, 60 m x 0.32 mm x 1.00 μ m
 Cat. No.: 7236
 Index: CCR00292
 Oven Temp.: 25 °C (hold 4 min) to 80 °C (hold 5 min) at 8 °C/min
 Carrier Gas: H₂, 40 cm/sec
 Injection: Split, 40:1, 200 °C
 Sample: Alcohol mix, 0.03 μ L
 Detector: FID, 128 x 10⁻¹¹ AFS, 200 °C



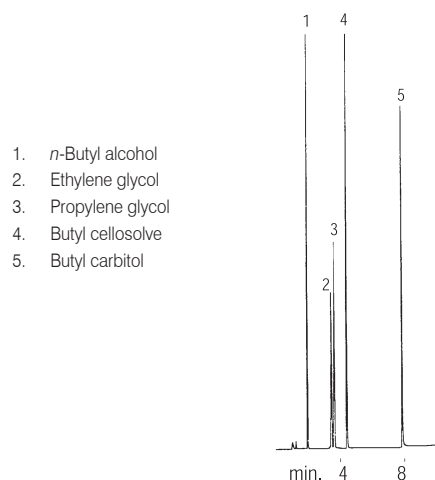
Glycols

Column: DM-200, 60 m x 0.53 mm x 3.00 μ m
 Cat. No.: 8356
 Index: CCR00326
 Oven Temp.: 40 °C to 250 °C (hold 15 min) at 8 °C/min
 Carrier Gas: H₂, 40 cm/sec
 Injection: Split, 19:1, 200 °C
 Sample: Glycols, 1.0 μ L, 50 ng on-column
 Detector: FID, 6.4 x 10⁻¹¹ AFS, 250 °C



Glycols / Alcohols

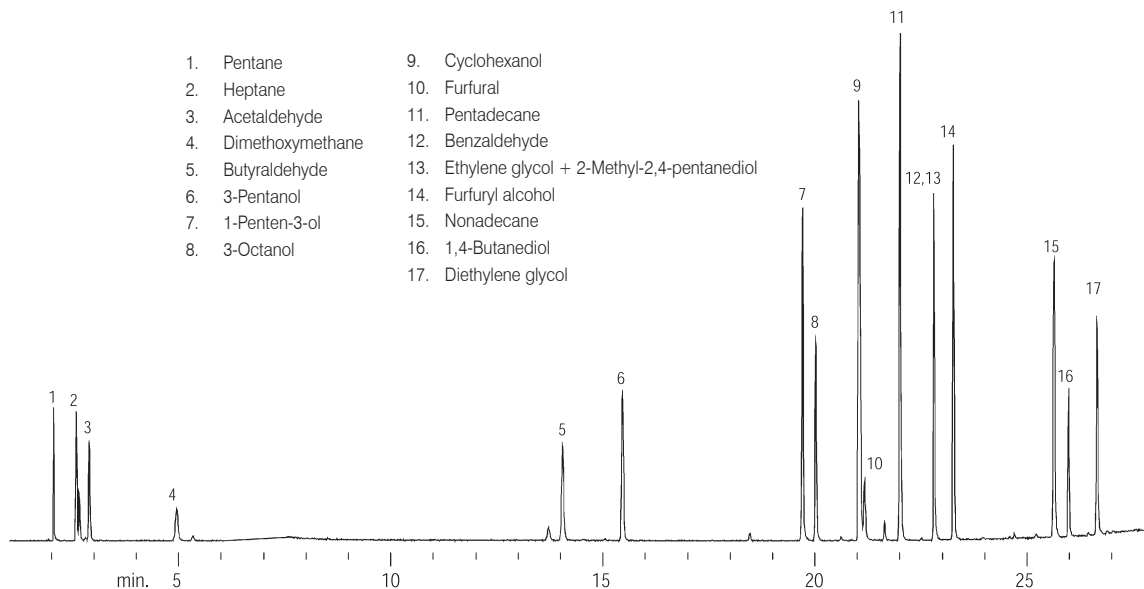
Column: DM-5, 30 m x 0.53 mm x 1.00 μ m
 Cat. No.: 7249
 Index: CCR00327
 Oven Temp.: 40 °C to 185 °C (hold 5 min) at 15 °C/min
 Carrier Gas: He, 40 cm/sec
 Injection: Direct, 150 °C
 Sample: Glycols and alcohols, 1.0 μ L, 100 ppm
 Detector: FID, 8 x 10⁻¹¹ AFS, 200 °C



Aldehydes / Ketones

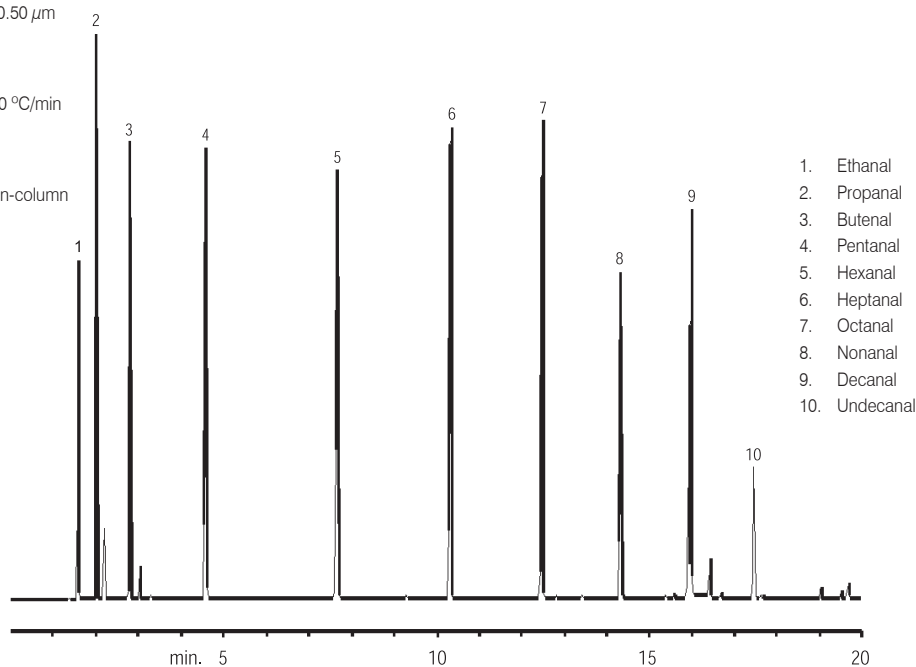
Alcohols / Aldehydes

Column: DM-Wax, 60 m x 0.53 mm x 1.00 μ m
Cat. No.: 7552
Index: CCR00295
Oven Temp.: 45 °C (hold 10 min) to 250 °C (hold 20 min) at 12 °C/min
Carrier Gas: He, 50 cm/sec, 50 °C
Injection: Split, 7:1, 250 °C
Sample: Alcohols and aldehydes, 1.0 μ L
Detector: FID, 285 °C
Ionization: EI, scan 10, range 300



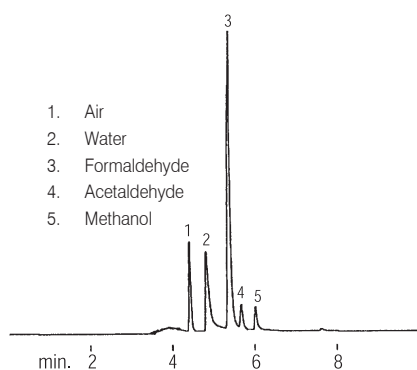
Aldehydes

Column: DM-InertWax, 30 m x 0.25 mm x 0.50 μ m
Cat. No.: 8523
Index: CCR00300
Oven Temp.: 40 °C (hold 5 min) to 200 °C at 10 °C/min
Carrier Gas: H₂, 35 cm/sec, 40 °C
Injection: Split, 100:1, 200 °C
Sample: C2-C11 Aldehydes mix, 250 ng on-column
Detector: FID, 82 x 10⁻¹¹ AFS, 200 °C



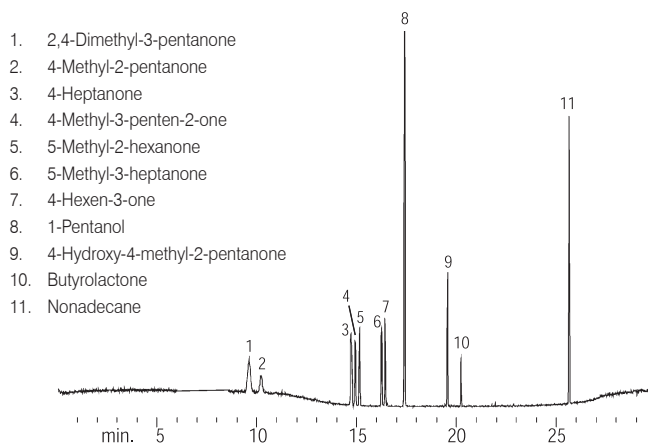
Formaldehyde

Column: DM-1701, 60 m x 0.25 mm x 1. μ m
 Cat. No.: 7324
 Index: CCR00313
 Oven Temp.: 40 °C constant
 Carrier Gas: He, 20 cm/sec
 Injection: Split, 30 mL/min, 150 °C
 Sample: Formaldehyde, 0.5 μ L
 Detector: TCD, 8 mV, 175 °C



Ketones

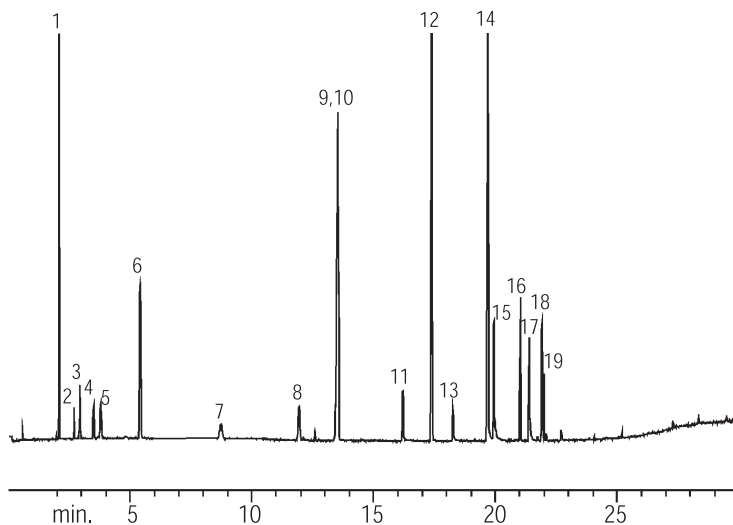
Column: DM-Wax, 60 m x 0.53 mm x 1.00 μ m
 Cat. No.: 7552
 Index: CCR00316
 Oven Temp.: 45 °C (hold 10 min) to 250 °C (hold 20 min) at 12 °C/min
 Carrier Gas: He, 51 cm/sec, 50 °C
 Injection: Split, 8:1, 250 °C
 Sample: Ketones, 1.0 μ L
 Detector: MSD, 250 °C
 Ionization: EI



Aldehydes

Column: DM-Wax, 60 m x 0.53 mm x 1.00 μ m
 Cat. No.: 7552
 Index: CCR00315
 Oven Temp.: 45 °C (hold 10 min) to 250 °C (hold 20 min) at 12 °C/min
 Carrier Gas: He, 51 cm/sec, 50 °C
 Injection: Split, 8:1, 250 °C
 Sample: Aldehydes, 1.0 μ L
 Detector: MSD, 250 °C
 Ionization: EI

- | | |
|----------------------|---------------------------|
| 1. Pentane | 11. Heptanal |
| 2. Acetaldehyde | 12. 1-Pentanol |
| 3. Dimethoxymethane | 13. Octanal |
| 4. Propanal | 14. Tetradecane |
| 5. 2-Methyl propanal | 15. Nonanal |
| 6. Methanol | 16. 2-Furancarboxaldehyde |
| 7. Pentanal | 17. Decanal |
| 8. 2-Butenal | 18. Benzaldehyde |
| 9. Hexanal | 19. 1-Octanol |
| 10. Undecane | |



Esters

Esters

Column: DM-Wax, 60 m x 0.53 mm x 1.00 μ m

Cat. No.: 7552

Index: CCR00314

Oven Temp.: 45 $^{\circ}$ C (hold 10 min) to 250 $^{\circ}$ C (hold 20 min) at 12 $^{\circ}$ C/min

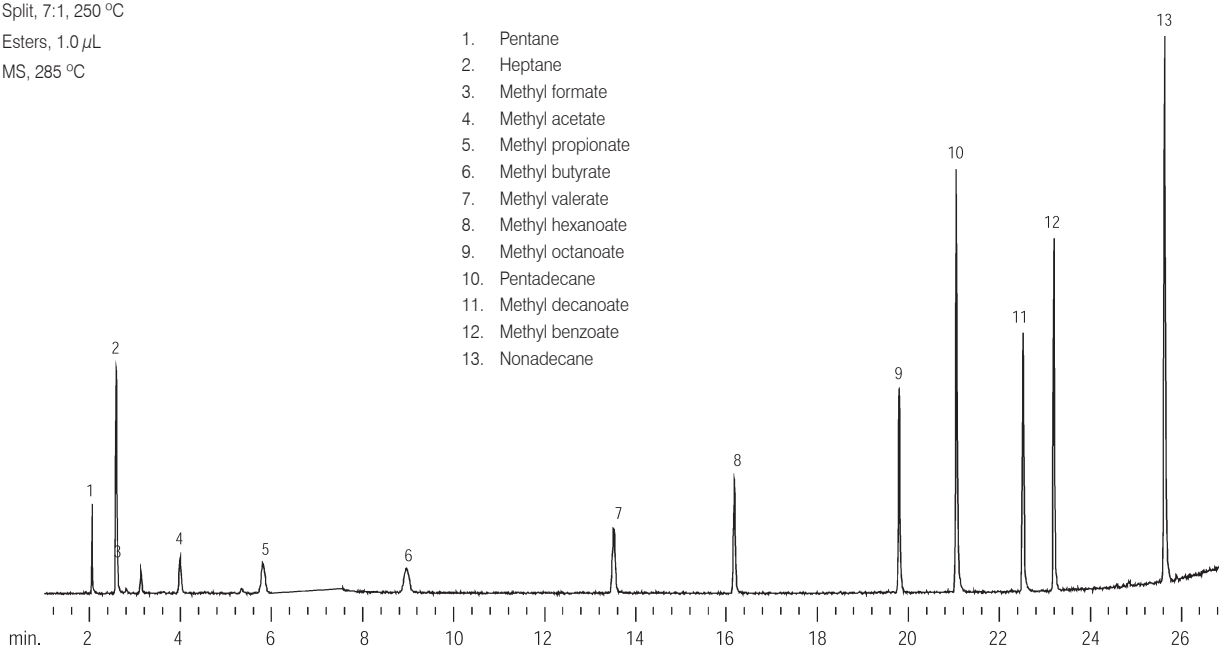
Carrier Gas: He, 50 cm/sec, 50 $^{\circ}$ C

Injection: Split, 7:1, 250 $^{\circ}$ C

Sample: Esters, 1.0 μ L

Detector: MS, 285 $^{\circ}$ C

1. Pentane
2. Heptane
3. Methyl formate
4. Methyl acetate
5. Methyl propionate
6. Methyl butyrate
7. Methyl valerate
8. Methyl hexanoate
9. Methyl octanoate
10. Pentadecane
11. Methyl decanoate
12. Methyl benzoate
13. Nonadecane



Esters

Column: DM-Wax, 60 m x 0.53 mm x 1.00 μ m

Cat. No.: 7552

Index: CCR00318

Oven Temp.: 40 $^{\circ}$ C (hold 10 min) to 245 $^{\circ}$ C (hold 20 min) at 4 $^{\circ}$ C/min

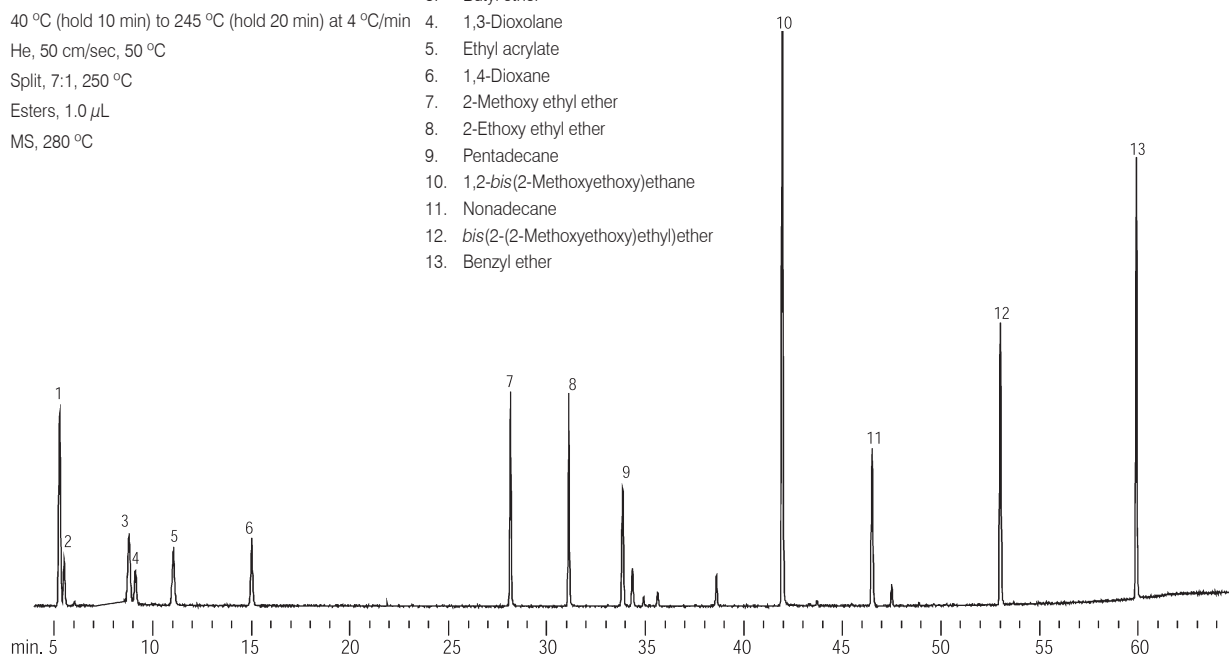
Carrier Gas: He, 50 cm/sec, 50 $^{\circ}$ C

Injection: Split, 7:1, 250 $^{\circ}$ C

Sample: Esters, 1.0 μ L

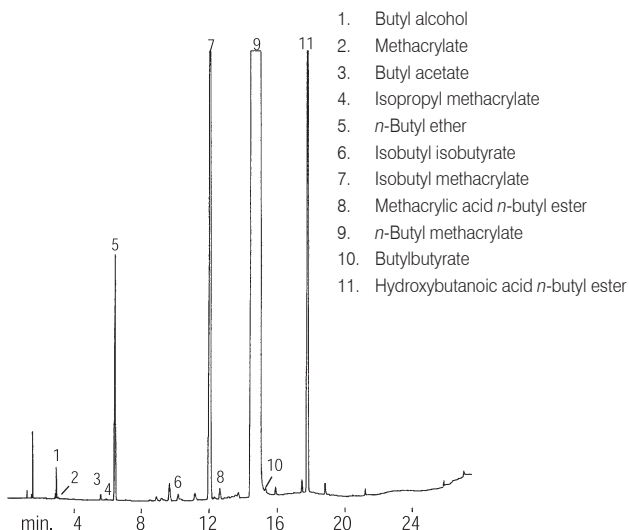
Detector: MS, 280 $^{\circ}$ C

1. Tetrahydro-2-methyl furan
2. Butyraldehyde
3. Butyl ether
4. 1,3-Dioxolane
5. Ethyl acrylate
6. 1,4-Dioxane
7. 2-Methoxy ethyl ether
8. 2-Ethoxy ethyl ether
9. Pentadecane
10. 1,2-bis(2-Methoxyethoxy)ethane
11. Nonadecane
12. bis(2-(2-Methoxyethoxy)ethyl)ether
13. Benzyl ether



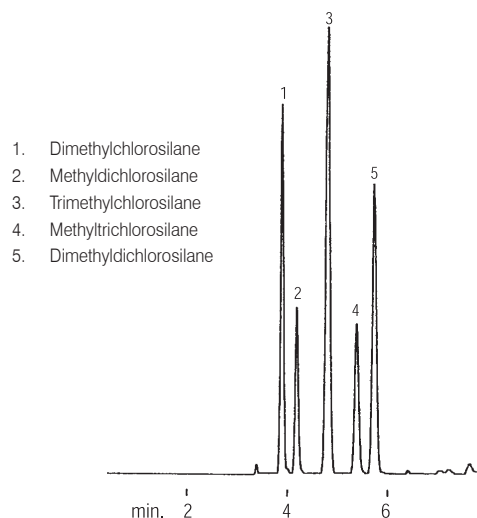
Acrylic Esters

Column: DM-1701, 30 m x 0.32 mm x 1.00 μ m
 Cat. No.: 7333
 Index: CCR00312
 Oven Temp.: 70 °C (hold 10 min) to 120 °C at 5 °C/min to 250 °C at 15 °C/min
 Carrier Gas: H₂, 40 cm/sec
 Injection: Split, 56:1, 250 °C
 Sample: Acrylic esters, 0.5 μ L
 Detector: FID, 4 x 10⁻¹¹ AFS, 250 °C



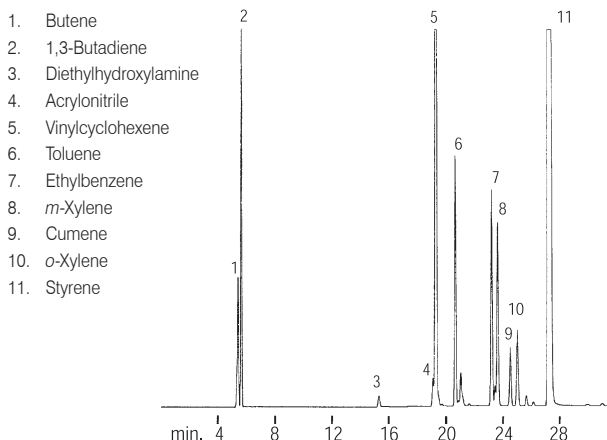
Silanes

Column: DM-200, 60 m x 0.53 mm x 3.00 μ m
 Cat. No.: 8356
 Index: CCR00362
 Oven Temp.: 40 °C to 250 °C (hold 5 min) at 8 °C/min
 Carrier Gas: H₂, 40 cm/sec
 Injection: Split, 40 mL/min, 200 °C
 Sample: Silanes, 0.5 μ L
 Detector: FID, 1.02 x 10⁻⁹ AFS, 270 °C



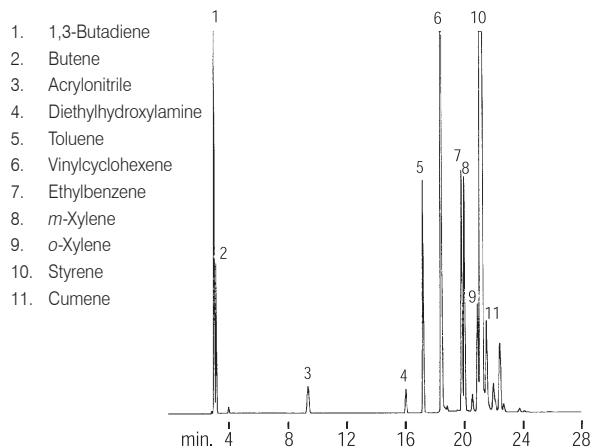
Styrene Impurities

Column: DM-Wax, 30 m x 0.53 mm x 0.50 μ m
 Cat. No.: 7547
 Index: CCR00356
 Oven Temp.: 40 °C (hold 10 min) to 150 °C (hold 15 min) at 10 °C/min
 Carrier Gas: He, 20 cm/sec, 40 °C
 Injection: Split, 40 cc/min, 150 °C
 Sample: 95% Styrene, 0.5 mL
 Detector: FID, 16 x 10⁻¹¹ AFS, 150 °C



Styrene Impurities

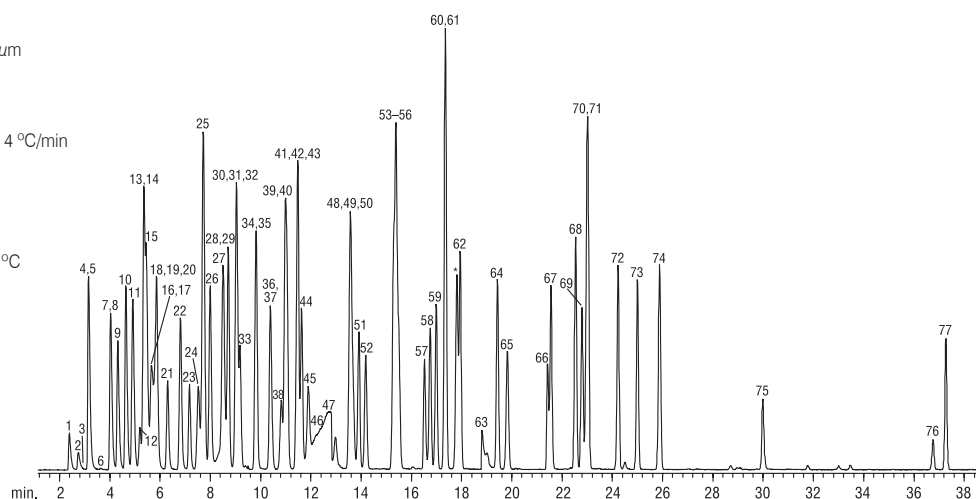
Column: DM-1701, 30 m x 0.53 mm x 3.00 μ m
 Cat. No.: 7355
 Index: CCR00357
 Oven Temp.: 40 °C (hold 10 min) to 150 °C (hold 15 min) at 12 °C/min
 Carrier Gas: He, 20 cm/sec, 40 °C
 Injection: Split, 40 cc/min, 150 °C
 Sample: 95% Styrene, 0.5 mL
 Detector: FID, 16 x 10⁻¹¹ AFS, 150 °C



Solvents

USP Solvents

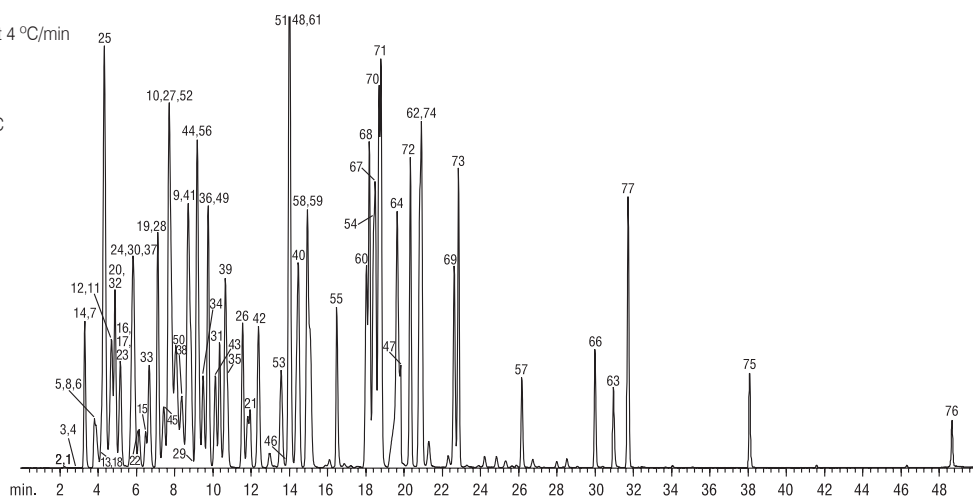
Column: DM-1, 60 m x 0.53 mm x 3.00 μ m
 Cat. No.: 7156
 Index: CER00463
 Oven Temp.: 35 $^{\circ}$ C (hold 4min) to 250 $^{\circ}$ C at 4 $^{\circ}$ C/min
 septa purge 5 mL/min
 Carrier Gas: He, 45.6 cm/sec, 35 $^{\circ}$ C
 Head Pressure: 11.0 psi constant pressure
 Injection: Split, 100 mL/min, ~1:13, 250 $^{\circ}$ C
 Sample: Solvents, ~1.3% each
 Detector: MS
 Scan Range: 10 AMU - 260 AMU



- | | | | | |
|---------------------|--------------------------------------|-----------------------------|---------------------------|-----------------------------------|
| 1. Formaldehyde | 17. Methylal | 33. Chloroform | 49. Trichloroethylene | 65. 1,1-Diethoxypropane |
| 2. Water | 18. 1,1-Dichloroethene | 34. Tetrahydrofuran | 50. Isooctane | 66. <i>N,N</i> -Dimethylacetamide |
| 3. Chloromethane | 19. Methyl acetate | 35. 2-Methoxyethanol | 51. 2-Ethoxyethanol | 67. Chlorobenzene |
| 4. Methanol | 20. Methylene chloride | 36. 1,2-Dichloroethane | 52. <i>n</i> -Heptane | 68. Ethylbenzene |
| 5. Acetaldehyde | 21. Nitromethane | 37. Methyl cyclopentane | 53. Isoamyl alcohol | 69. Isoamyl acetate |
| 6. Ethylene oxide | 22. 1-Propanol | 38. 1,1,1-Trichloroethane | 54. Hexanone | 70. <i>p</i> -Xylene |
| 7. Chloroethane | 23. <i>trans</i> -1,2-Dichloroethene | 39. 1,2-Dimethoxyethane | 55. Pyridine | 71. <i>m</i> -Xylene |
| 8. Ethanol | 24. Methyl <i>tert</i> -butyl ether | 40. Methyl isopropyl ketone | 56. Methyl cyclohexane | 72. <i>o</i> -Xylene |
| 9. Acetonitrile | 25. 2-Methylpentane (spiked at 9%) | 41. 2,2-Dimethoxypropane | 57. Dimethyl formamide | 73. Anisole |
| 10. Acetone | 26. 2-Butanone | 42. Isopropyl acetate | 58. 1,1,2-Trichloroethane | 74. Isopropyl benzene (Cumene) |
| 11. 2-Propanol | 27. 2-Butanol | 43. 1-Butanol | 59. 1-Pentanol | 75. 1-Methyl-2-pyrrolidinone |
| 12. 2-Chloropropane | 28. <i>cis</i> -1,2-Dichloroethene | 44. Benzene | 60. Isobutyl acetate | 76. Sulfolane |
| 13. Diethyl ether | 29. Acetic acid | 45. Carbon tetrachloride | 61. Toluene | 77. 1,2,3,4-Tetrahydronaphthalene |
| 14. Pentane | 30. Isopropyl ether | 46. Ethylene glycol | 62. 2-Hexanone | |
| 15. Ethyl formate | 31. Ethyl acetate | 47. Formamide | 63. Dimethyl sulfoxide | |
| 16. Formic acid | 32. Hexane | 48. 1,4-Dioxane | 64. Butyl acetate | |

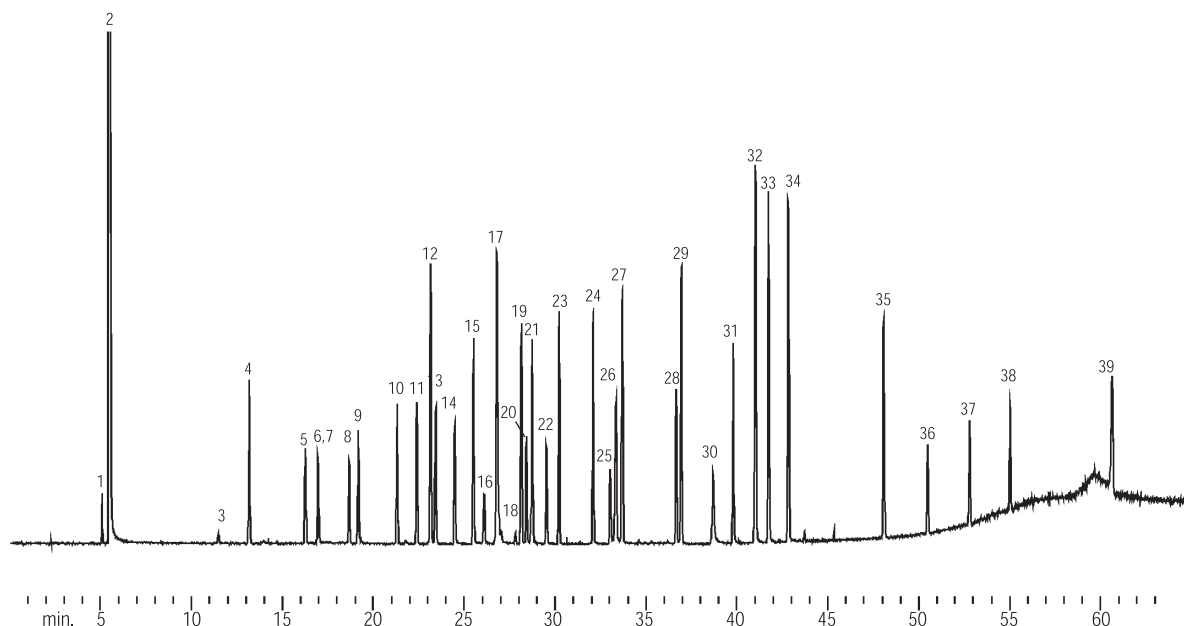
USP Solvents

Column: DM-200, 60 m x 0.53 mm x 3.00 μ m
 Cat. No.: 8356
 Index: CER00464
 Oven Temp.: 35 $^{\circ}$ C (hold 4 min) to 250 $^{\circ}$ C at 4 $^{\circ}$ C/min
 Head Pressure: 11.0 psi constant pressure
 Carrier Gas: He, 45.6 cm/sec, 35 $^{\circ}$ C
 Injection: Split, 100 mL/min, 1:13, 250 $^{\circ}$ C
 Sample: Solvents, ~1.3% each
 Detector: MS
 Scan Range: 10 AMU - 260 AMU



Solvents Mixture #1

Column: DM-1, 60 m x 0.53 mm x 3.00 μ m
 Cat. No.: 7156
 Index: CCR00335
 Oven Temp.: 40 °C (hold 5 min) to 285 °C at 5 °C/min
 Carrier Gas: He, 40 cm/sec
 Injection: Split, 50 mL/min, 275 °C
 Sample: Solvents mixture #1, 1.0 μ L
 Detector: MS full scan, 285 °C

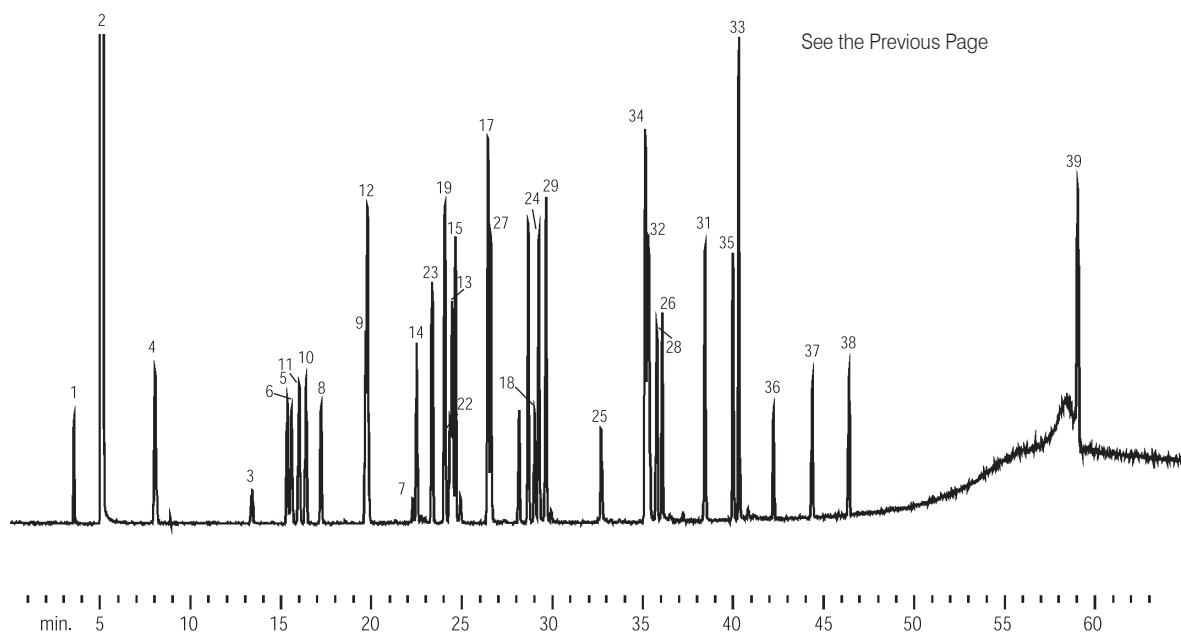


1. Pentane	22. Hexachloroethane	43. 1-Nitropropane	64. 1-Dodecanol	85. 2-Methyl-2,4-pentanediol
2. Methylene chloride	23. Undecane	44. Dimethyl formamide	65. Tetraethylene glycol	86. Butoxyethanol
3. Ethylene glycol	24. 1-Nonanol	45. 2-Methyl-3-pentanol	66. Dibenzyl	87. 1,2,3-Trichloropropane
4. Heptane	25. <i>p</i> -Methoxyphenol	46. Toluene	67. Diethyl phthalate	88. 1,4-Butanediol
5. Cyclopentanol	26. Triethylene glycol	47. Ethyl chloroacetate	68. Tributyl phosphate	89. Methyl hexanoate
6. 3-Hexanol	27. Dodecane	48. Dimethylacetamide	69. Diphenyl sulfone	90. 1,2,4-Trimethylbenzene
7. Acetamide	28. Undecanal	49. <i>p</i> -Xylene	70. Allyl alcohol	91. 2-Ethyl-1-hexanol
8. 2-Methyl-1-pentanol	29. Tridecane	50. <i>sec</i> -Tetrachloroethane	71. -	92. Dipentene
9. Furfuryl alcohol	30. -	51. Benzaldehyde	72. Isopropyl acetate	93. Tetrahydrofurfuryl acetate
10. Butyl ether	31. Dodecanal	52. <i>o</i> -Chlorotoluene	73. Benzene	94. -
11. Nonane	32. Dicyclohexylamine	53. 2,6-Dimethyl-4-heptanone	74. 2-Nitropropane	95. Decahydronaphthalene
12. Cume ne	33. <i>bis</i> (2,2-Methoxy)ethyl ether	54. 2-Octanone	75. Nitroethane	96. -
13. Ethyl amyl ketone	34. Pentadecane	55. <i>o</i> -Cresol	76. Pentanal	97. -
14. Heptanol	35. Heptadecane	56. α -Methylbenzyl alcohol	77. 2-Bromobutane	98. 2-Decanol
15. Butyl butanoate	36. Octadecane	57. 5-Nonanone	78. 1-Chloropentane	99. 1,2- <i>bis</i> (2-Methoxyethoxy)ethane
16. -	37. Nonadecane	58. Nonanal	79. Cyclopentanone	100. 2-Phenoxyethanol
17. Benzyl alcohol	38. Eicosane	59. Decanal	80. 2-Hexanol	101. -
18. Dipropylene glycol	39. Acetyl tributyl citrate	60. -	81. Butyl acetate	102. Benzyl ether
19. Diethylbenzene	40. 2-Buten-1-ol	61. 1-Decanol	82. 2-Ethyl-1-butanol	
20. -	41. Formamide	62. 1-Undecanol	83. 3-Ethyl-3-pentanol	
21. -	42. 3-Pentanol	63. 2-Dodecanone	84. 1,4-Dichlorobutane	

Solvents

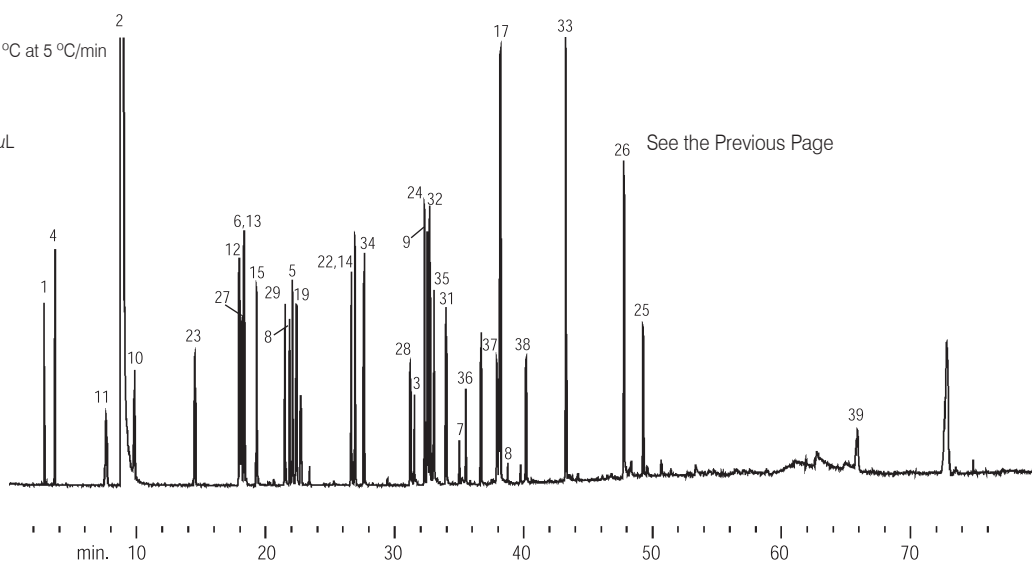
Solvents Mixture #1

Column: DM-200, 60 m x 0.53 mm x 3.00 μ m
Cat. No.: 8356
Index: CCR00336
Oven Temp.: 40 °C (hold 5 min) to 285 °C at 5 °C/min
Carrier Gas: He, 40 cm/sec
Injection: Split, 50 mL/min, 275 °C
Sample: Solvents mixture #1, 1.0 μ L
Detector: MS, TIC mode, 285 °C



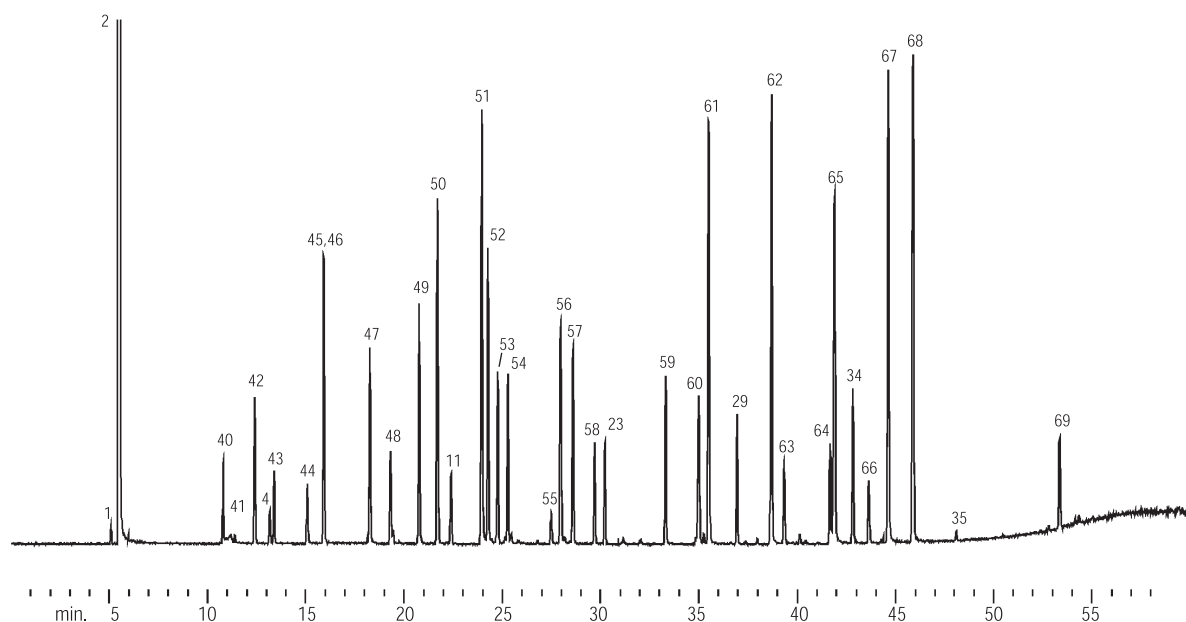
Solvents Mixture #1

Column: DM-Wax, 60 m x 0.53 mm x 1.00 μ m
Cat. No.: 7552
Index: CCR00337
Oven Temp.: 40 °C (hold 5 min) to 250 °C at 5 °C/min
Carrier Gas: He, 40 cm/sec
Injection: Split, 50 mL/min, 275 °C
Sample: Solvents mixture #1, 1.0 μ L
Detector: MS full scan, 285 °C



Solvents Mixture #2

Column: DM-1, 60 m x 0.53 mm x 3.00 μ m
 Cat. No.: 7156
 Index: CCR00338
 Oven Temp.: 40 °C (hold 5 min) to 250 °C at 5 °C/min
 Carrier Gas: He, 40 cm/sec
 Injection: Split, 50 mL/min, 275 °C
 Sample: Solvents mixture #2, 1.0 μ L
 Detector: MS full scan, 285 °C

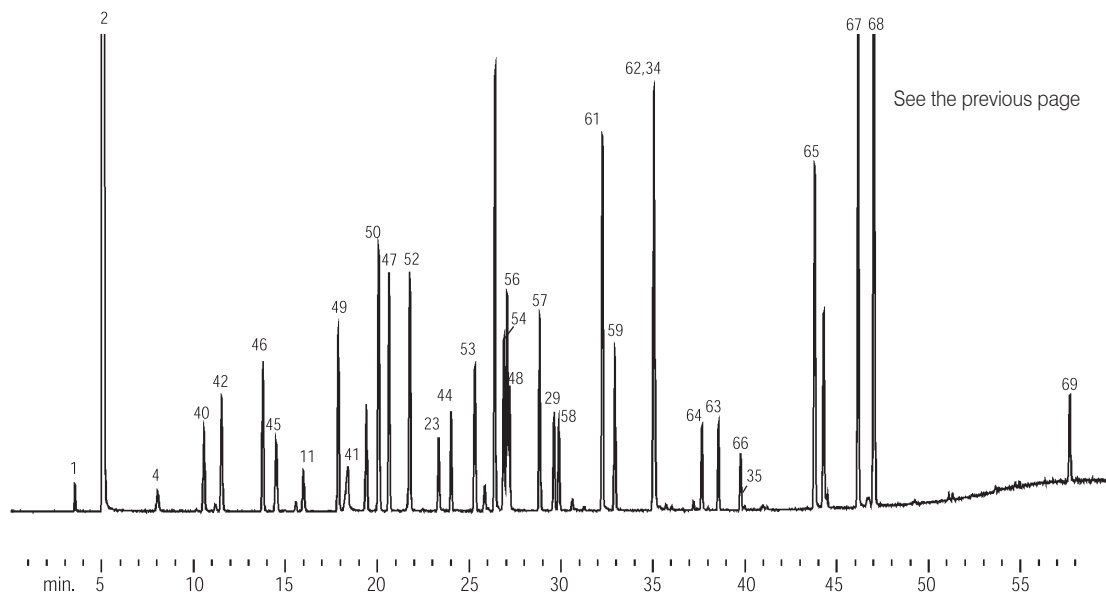


1. Pentane	22. Hexachloroethane	43. 1-Nitropropane	64. 1-Dodecanol	85. 2-Methyl-2,4-pentanediol
2. Methylene chloride	23. Undecane	44. Dimethyl formamide	65. Tetraethylene glycol	86. Butoxyethanol
3. Ethylene glycol	24. 1-Nonanol	45. 2-Methyl-3-pentanol	66. Dibenzyl	87. 1,2,3-Trichloropropane
4. Heptane	25. <i>p</i> -Methoxyphenol	46. Toluene	67. Diethyl phthalate	88. 1,4-Butanediol
5. Cyclopentanol	26. Triethylene glycol	47. Ethyl chloroacetate	68. Tributyl phosphate	89. Methyl hexanoate
6. 3-Hexanol	27. Dodecane	48. Dimethylacetamide	69. Diphenyl sulfone	90. 1,2,4-Trimethylbenzene
7. Acetamide	28. Undecanal	49. <i>p</i> -Xylene	70. Allyl alcohol	91. 2-Ethyl-1-hexanol
8. 2-Methyl-1-pentanol	29. Tridecane	50. <i>sec</i> -Tetrachloroethane	71. -	92. Dipentene
9. Furfuryl alcohol	30. -	51. Benzaldehyde	72. Isopropyl acetate	93. Tetrahydrofurfuryl acetate
10. Butyl ether	31. Dodecanal	52. <i>o</i> -Chlorotoluene	73. Benzene	94. -
11. Nonane	32. Dicyclohexylamine	53. 2,6-Dimethyl-4-heptanone	74. 2-Nitropropane	95. Decahydronaphthalene
12. Cume ne	33. <i>bis</i> (2,2-Methoxy)ethyl ether	54. 2-Octanone	75. Nitroethane	96. -
13. Ethyl amyl ketone	34. Pentadecane	55. <i>o</i> -Cresol	76. Pentanal	97. -
14. Heptanol	35. Heptadecane	56. α -Methylbenzyl alcohol	77. 2-Bromobutane	98. 2-Decanol
15. Butyl butanoate	36. Octadecane	57. 5-Nonanone	78. 1-Chloropentane	99. 1,2- <i>bis</i> (2-Methoxyethoxy)ethane
16. -	37. Nonadecane	58. Nonanal	79. Cyclopentanone	100. 2-Phenoxyethanol
17. Benzyl alcohol	38. Eicosane	59. Decanal	80. 2-Hexanol	101. -
18. Dipropylene glycol	39. Acetyl tributyl citrate	60. -	81. Butyl acetate	102. Benzyl ether
19. Diethylbenzene	40. 2-Buten-1-ol	61. 1-Decanol	82. 2-Ethyl-1-butanol	
20. -	41. Formamide	62. 1-Undecanol	83. 3-Ethyl-3-pentanol	
21. -	42. 3-Pentanol	63. 2-Dodecanone	84. 1,4-Dichlorobutane	

Solvents

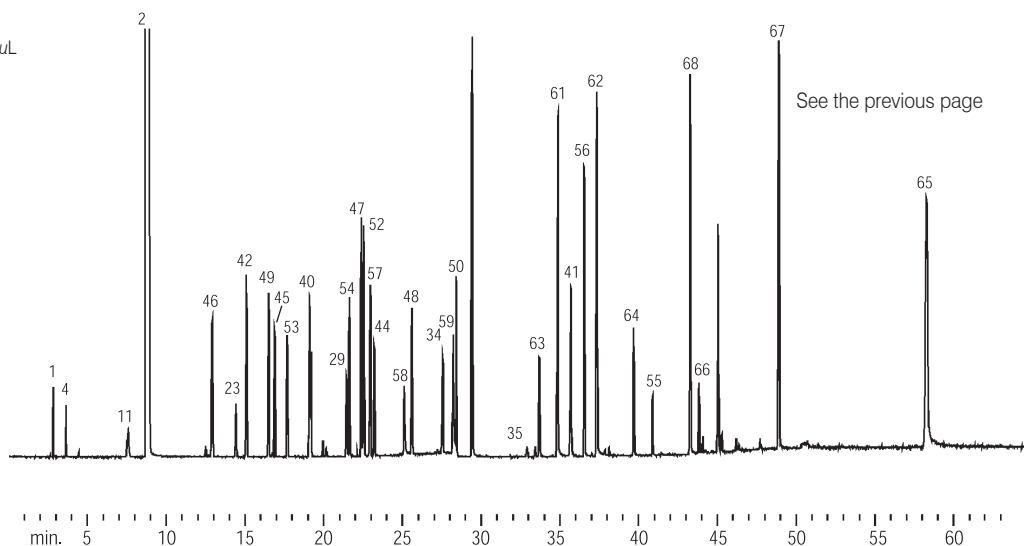
Solvents Mixture #2

Column: DM-200, 60 m x 0.53 mm x 3.00 μ m
Cat. No.: 8356
Index: CCR00339
Oven Temp.: 40 °C (hold 5 min) to 285 °C at 5 °C/min
Carrier Gas: He, 40 cm/sec
Injection: Split, 50 mL/min, 275 °C
Sample: Solvents mixture #2, 1.0 μ L
Detector: MS full scan, 285 °C



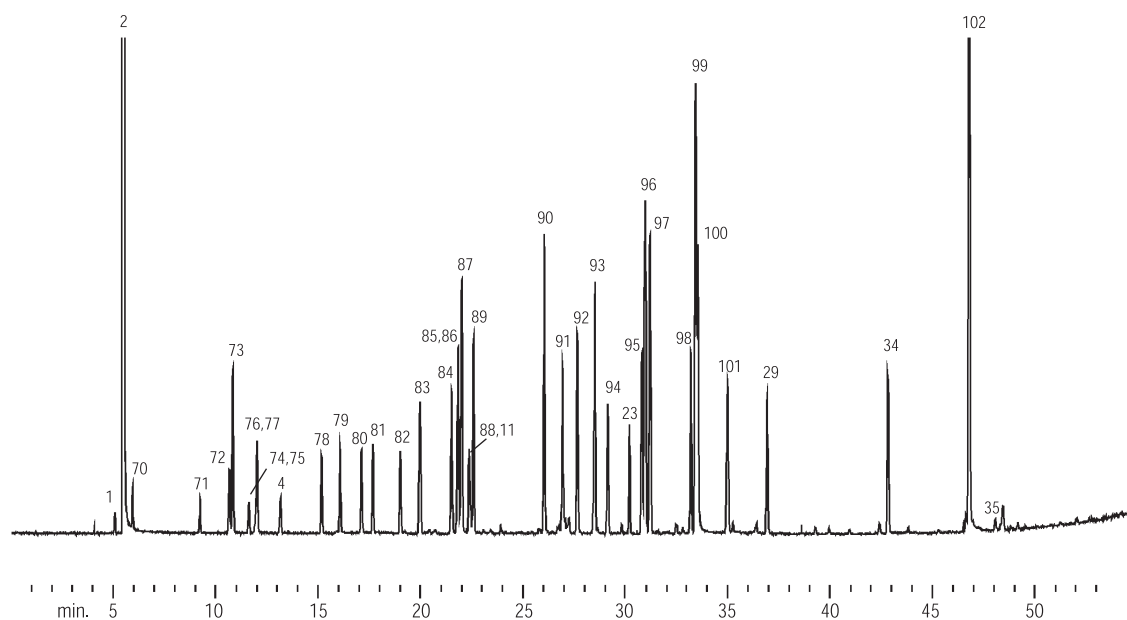
Solvents Mixture #2

Column: DM-Wax, 60 m x 0.53 mm x 1.00 μ m
Cat. No.: 7552
Index: CCR00340
Oven Temp.: 40 °C (hold 5 min) to 250 °C at 5 °C/min
Carrier Gas: He, 40 cm/sec
Injection: Split, 50 mL/min, 275 °C
Sample: Solvents mixture #2, 1.0 μ L
Detector: MS full scan, 285 °C



Solvents Mixture #3

Column: DM-1, 60 m x 0.53 mm x 3.00 μ m
 Cat. No.: 7156
 Index: CCR00341
 Oven Temp.: 40 °C (hold 5 min) to 285 °C at 5 °C/min
 Carrier Gas: He, 40 cm/sec
 Injection: Split, 50 mL/min, 275 °C
 Sample: Solvents mixture #3, 1.0 μ L
 Detector: MS full scan, 285 °C



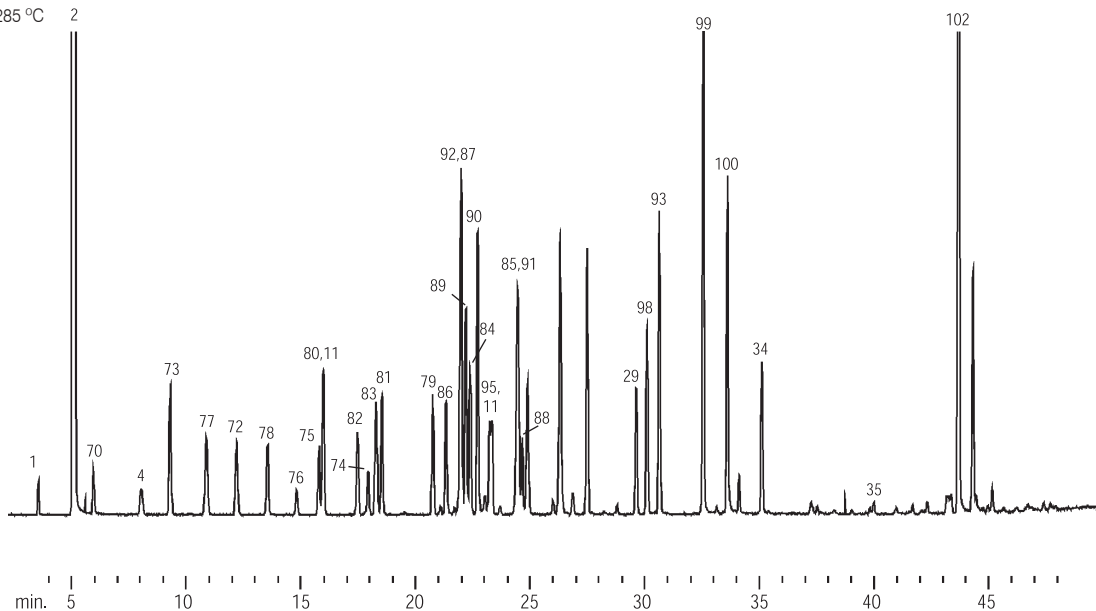
1. Pentane	22. Hexachloroethane	43. 1-Nitropropane	64. 1-Dodecanol	85. 2-Methyl-2,4-pentanediol
2. Methylene chloride	23. Undecane	44. Dimethyl formamide	65. Tetraethylene glycol	86. Butoxyethanol
3. Ethylene glycol	24. 1-Nonanol	45. 2-Methyl-3-pentanol	66. Dibenzyl	87. 1,2,3-Trichloropropane
4. Heptane	25. <i>p</i> -Methoxyphenol	46. Toluene	67. Diethyl phthalate	88. 1,4-Butanediol
5. Cyclopentanol	26. Triethylene glycol	47. Ethyl chloroacetate	68. Tributyl phosphate	89. Methyl hexanoate
6. 3-Hexanol	27. Dodecane	48. Dimethylacetamide	69. Diphenyl sulfone	90. 1,2,4-Trimethylbenzene
7. Acetamide	28. Undecanal	49. <i>p</i> -Xylene	70. Allyl alcohol	91. 2-Ethyl-1-hexanol
8. 2-Methyl-1-pentanol	29. Tridecane	50. <i>sec</i> -Tetrachloroethane	71. -	92. Dipentene
9. Furfuryl alcohol	30. -	51. Benzaldehyde	72. Isopropyl acetate	93. Tetrahydrofurfuryl acetate
10. Butyl ether	31. Dodecanal	52. <i>o</i> -Chlorotoluene	73. Benzene	94. -
11. Nonane	32. Dicyclohexylamine	53. 2,6-Dimethyl-4-heptanone	74. 2-Nitropropane	95. Decahydronaphthalene
12. Cume ne	33. <i>bis</i> (2,2-Methoxy)ethyl ether	54. 2-Octanone	75. Nitroethane	96. -
13. Ethyl amyl ketone	34. Pentadecane	55. <i>o</i> -Cresol	76. Pentanal	97. -
14. Heptanol	35. Heptadecane	56. α -Methylbenzyl alcohol	77. 2-Bromobutane	98. 2-Decanol
15. Butyl butanoate	36. Octadecane	57. 5-Nonanone	78. 1-Chloropentane	99. 1,2- <i>bis</i> (2-Methoxyethoxy)ethane
16. -	37. Nonadecane	58. Nonanal	79. Cyclopentanone	100. 2-Phenoxyethanol
17. Benzyl alcohol	38. Eicosane	59. Decanal	80. 2-Hexanol	101. -
18. Dipropylene glycol	39. Acetyl tributyl citrate	60. -	81. Butyl acetate	102. Benzyl ether
19. Diethylbenzene	40. 2-Buten-1-ol	61. 1-Decanol	82. 2-Ethyl-1-butanol	
20. -	41. Formamide	62. 1-Undecanol	83. 3-Ethyl-3-pentanol	
21. -	42. 3-Pentanol	63. 2-Dodecanone	84. 1,4-Dichlorobutane	

Solvents

Solvents Mixture #3

Column: DM-200, 60 m x 0.53 mm x 3.00 μ m
Cat. No.: 8356
Index: CCR00342
Oven Temp.: 40 $^{\circ}$ C (hold 5 min) to 285 $^{\circ}$ C at 5 $^{\circ}$ C/min
Carrier Gas: He, 40 cm/sec
Injection: Split, 50 mL/min, 275 $^{\circ}$ C
Sample: Solvents mixture #3, 1.0 μ L
Detector: MS full scan, 285 $^{\circ}$ C

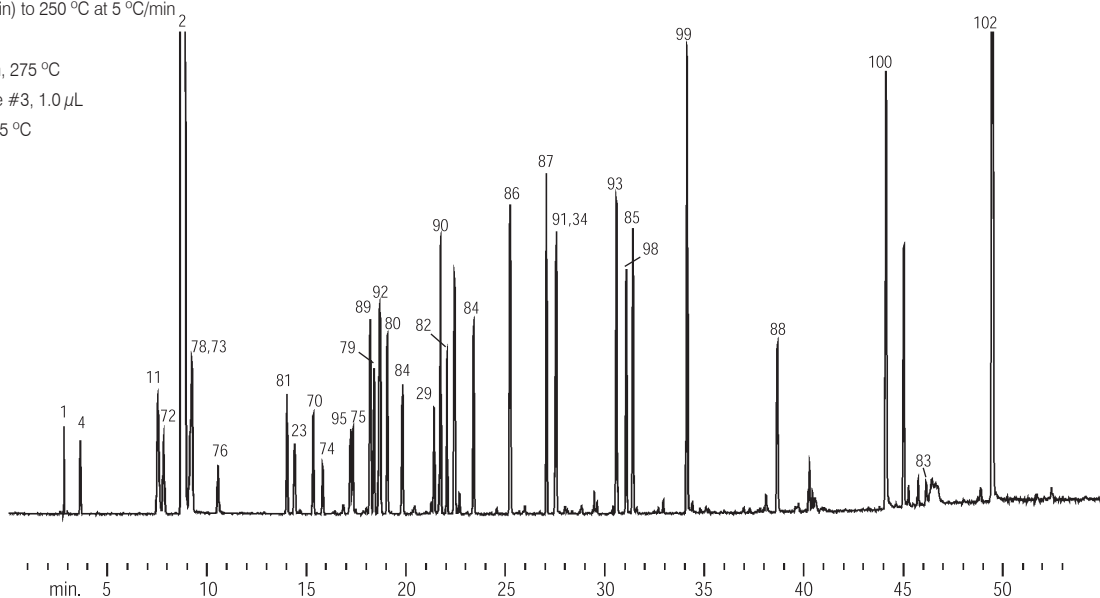
See the previous page



Solvents Mixture #3

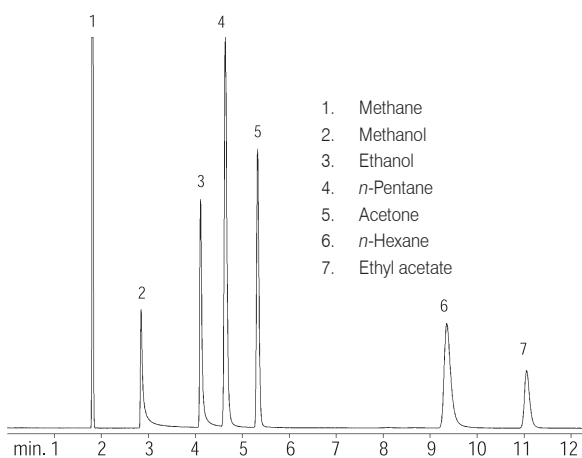
Column: DM-Wax, 60 m x 0.53 mm x 1.00 μ m
Cat. No.: 7552
Index: CCR00343
Oven Temp.: 40 $^{\circ}$ C (hold 5 min) to 250 $^{\circ}$ C at 5 $^{\circ}$ C/min
Carrier Gas: He, 40 cm/sec
Injection: Split, 50 mL/min, 275 $^{\circ}$ C
Sample: Solvents mixture #3, 1.0 μ L
Detector: MS full scan, 285 $^{\circ}$ C

See the previous page



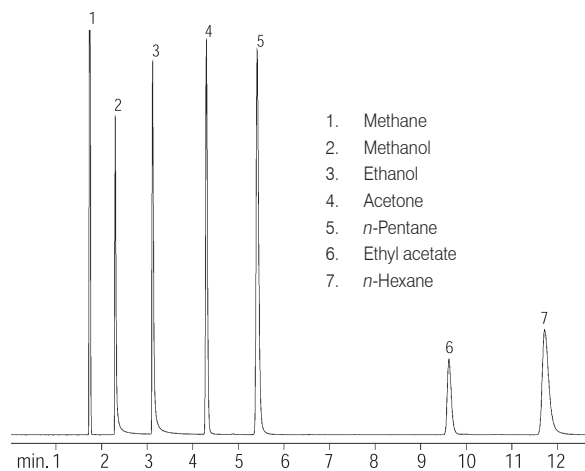
Polar Solvents

Column: DM-PLOT U, 30 m x 0.32 mm x 10.00 μ m
 Cat. No.: 8824
 Index: CSR00182
 Oven Temp.: 150 °C constant
 Carrier Gas: H₂
 Injection: Split, 20:1, 200 °C
 Sample: 50 ppm (w / v) each in He, 20 μ L
 Detector: FID, 200 °C



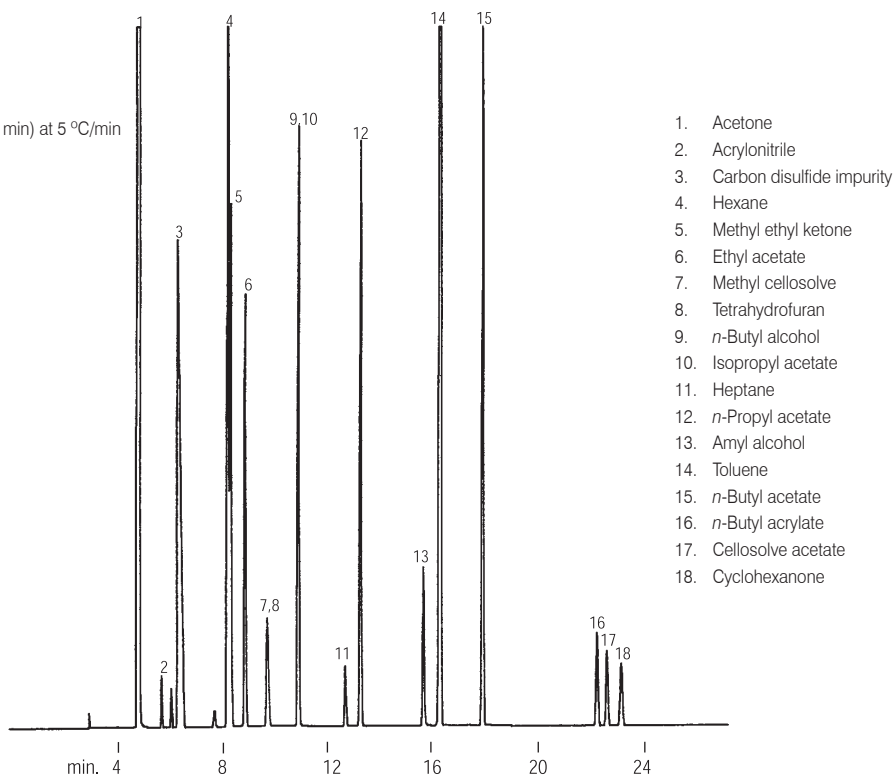
Polar Solvents

Column: DM-PLOT Q, 30 m x 0.32 mm x 10.00 μ m
 Cat. No.: 8818
 Index: CSR00181
 Oven Temp.: 150 °C constant
 Carrier Gas: H₂
 Injection: Split, 20:1, 200 °C
 Sample: 50 ppm (w / v) each in He, 20 μ L
 Detector: FID, 200 °C



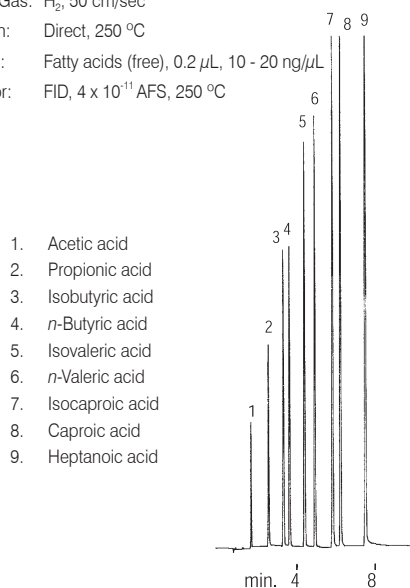
Solvents

Column: DM-5, 60 m x 0.32 mm x 3.00 μ m
 Cat. No.: 7242
 Index: CCR00346
 Oven Temp.: 50 °C (hold 4 min) to 120 °C (hold 20 min) at 5 °C/min
 Carrier Gas: H₂, 40 cm/sec, 50 °C
 Injection: Split, 300 °C
 Sample: in CS₂ solvent, 1.0 μ L
 Detector: FID, 128 x 10⁻¹² AFS, 300 °C



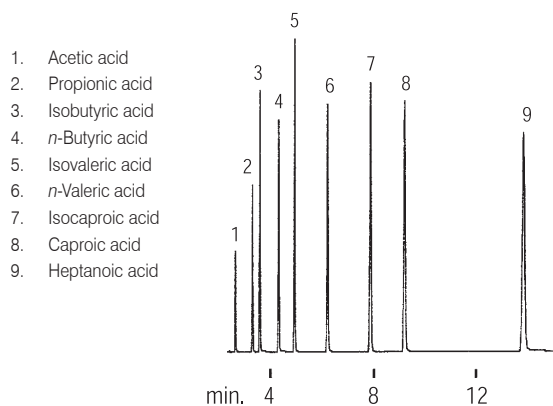
Fatty Acids (Free)

Column: DM-1, 30 m x 0.53 mm x 5.00 μ m
 Cat. No.: 7157
 Index: CCR00281
 Oven Temp.: 60 °C to 180 °C at 15 °C/min
 Carrier Gas: H₂, 50 cm/sec
 Injection: Direct, 250 °C
 Sample: Fatty acids (free), 0.2 μ L, 10 - 20 ng/ μ L
 Detector: FID, 4 x 10⁻¹¹ AFS, 250 °C



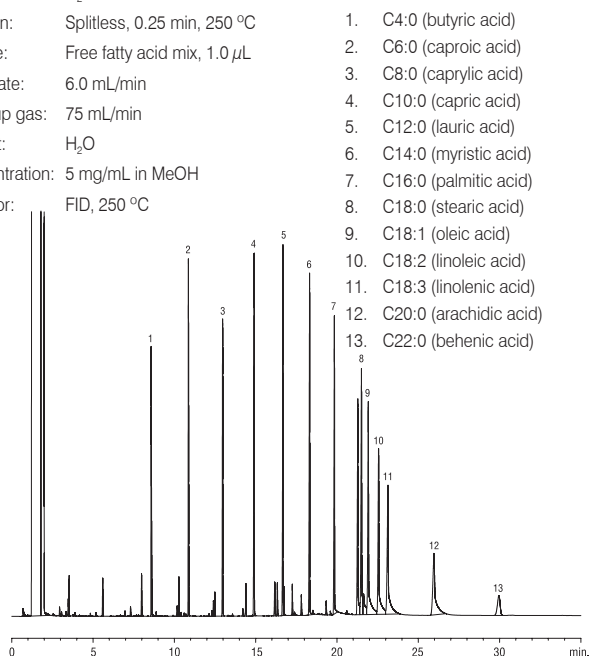
Fatty Acids (Free)

Column: DM-FFAP, 30 m x 0.25 mm x 0.25 μ m
 Cat. No.: 7621
 Index: CCR00280
 Oven Temp.: 145 °C, constant
 Carrier Gas: H₂, 40 cm/sec
 Injection: Split, 50:1, 250 °C
 Sample: Fatty acids (free), 1.0 μ L, 10 - 20 ng/ μ L
 Detector: FID, 2 x 10⁻¹¹ AFS, 250 °C



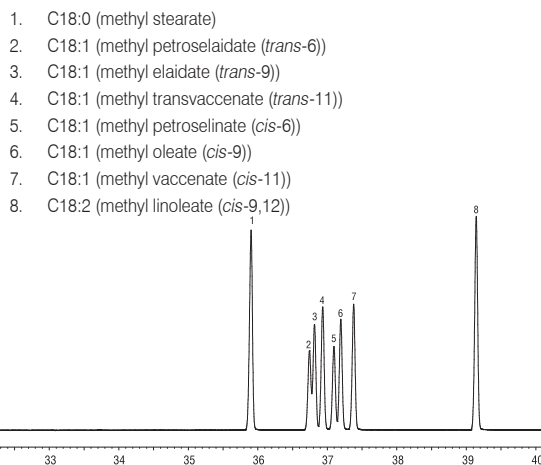
Fatty Acids (Free)

Column: DM-FFAP, 30 m x 0.32 mm x 0.25 μ m
 Cat. No.: 7631
 Index: CFR00653
 Oven Temp.: 40°C to 250°C (hold 15 min) at 10°C/min
 Carrier Gas: H₂
 Injection: Splitless, 0.25 min, 250 °C
 Sample: Free fatty acid mix, 1.0 μ L
 Flow Rate: 6.0 mL/min
 Make up gas: 75 mL/min
 Solvent: H₂O
 Concentration: 5 mg/mL in MeOH
 Detector: FID, 250 °C



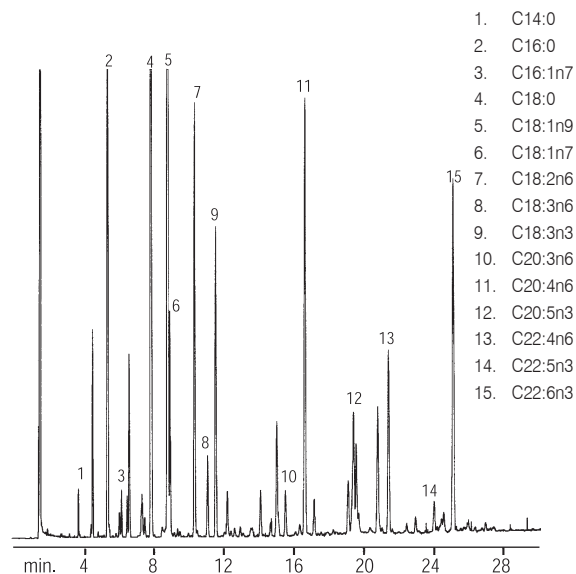
FAMES (*cis* / *trans* Isomers)

Column: DM-2560, 100 m x 0.25 mm x 0.20.00 μ m
 Cat. No.: 8858
 Index: CFR00652
 Sample: 10 mg/mL *cis* / *trans* FAMES mix in methylene chloride
 Injection: Split, 20:1, 1 μ L, 225 °C
 Oven Temp.: 100 °C (hold 4 min) to 240 °C (hold 10 min) at 3 °C/min
 Carrier Gas: H₂, 1.2 mL/min
 Detector: FID, 250 °C



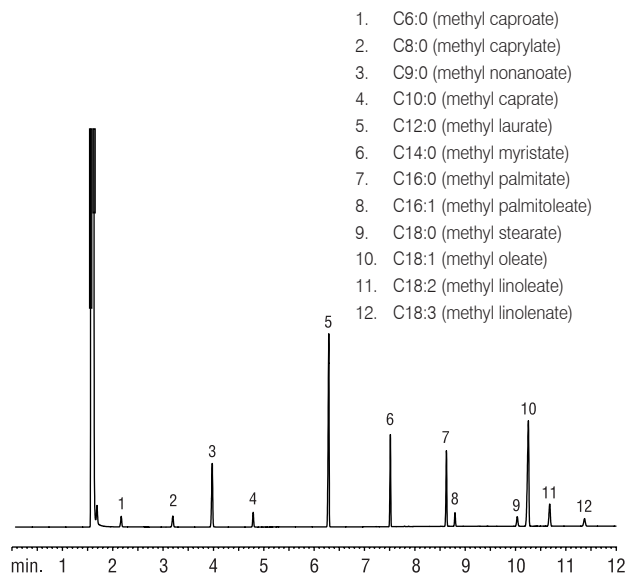
PUFA (Animal Source)

Column: DM-2330, 30 m x 0.32 mm x 0.20.00 μ m
 Cat. No.: 8633
 Index: CFR00119
 Oven Temp.: 160 °C to 250 °C (hold 10 min) at 2 °C/min
 Carrier Gas: H₂, 40 cm/sec
 Injection: Split, 260 °C
 Sample: PUFA (animal source) mix, 0.1 μ L
 Detector: FID, 8 x 10⁻¹¹ AFS, 260 °C



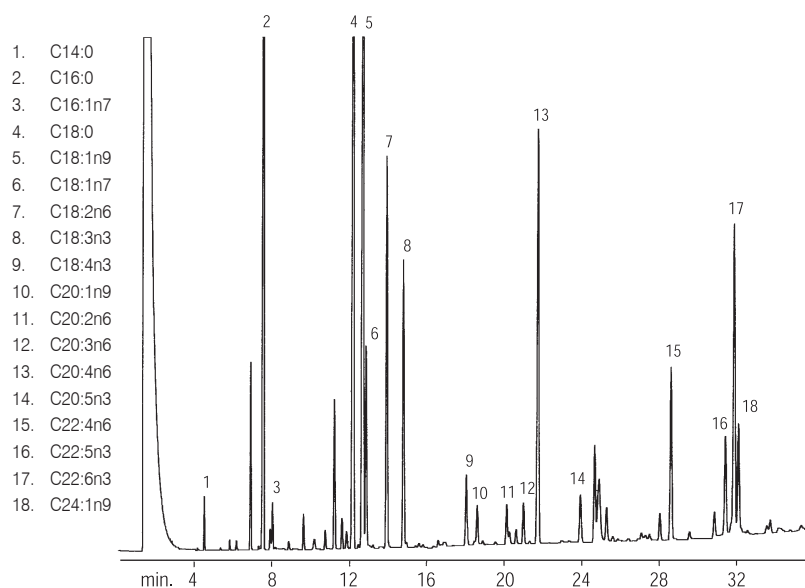
FAMES

Column: DM-InertWax, 30 m x 0.25 mm x 0.25 μ m
 Cat. No.: 8521
 Index: CFR00538
 Oven Temp.: 120 °C (hold 3 min) to 220 °C (hold 12 min) at 20 °C/min
 Carrier Gas: He, 34 cm/sec, 1 mL/min
 Injection: Split, 100:1, 250 °C
 Sample: Saw palmetto, 1.0 μ L
 Detector: FID, 300 °C



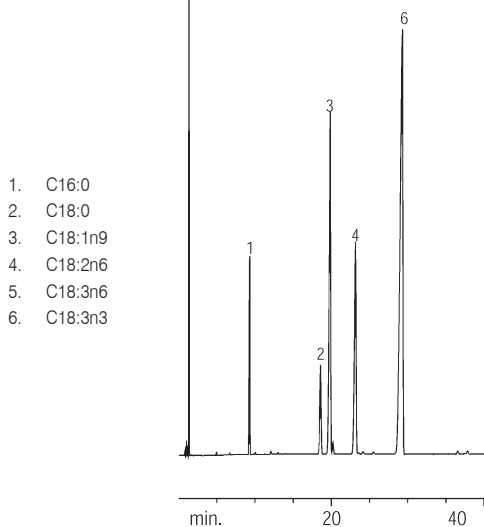
PUFA (Animal Source)

Column: DM-Wax, 30 m x 0.25 mm x 0.25 μ m
 Cat. No.: 7521
 Index: CFR00117
 Oven Temp.: 160 °C to 250 °C (hold 10 min) at 2 °C/min
 Carrier Gas: H₂, 40 cm/sec
 Injection: Split, 20:1, 260 °C
 Sample: PUFA mix, 0.1 μ L
 Detector: FID, 8 x 10⁻¹¹ AFS, 260 °C



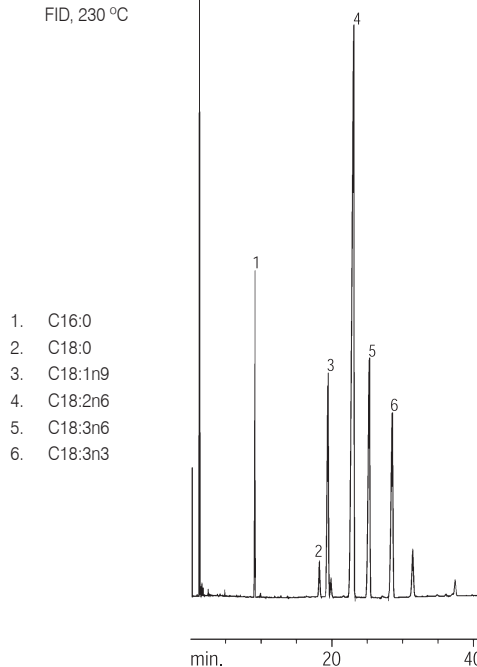
FAMES (Flax Seed Oil)

Column: DM-FAMEWAX, 30 m x 0.25 mm x 0.25 μ m
 Cat. No.: **7811**
 Index: CFR00364
 Oven Temp.: 165 $^{\circ}$ C (hold 30 min) to 220 $^{\circ}$ C (hold 15 min) at 1.5 $^{\circ}$ C/min
 Carrier Gas: He, 40 cm/sec
 Injection Temp.: 225 $^{\circ}$ C
 Detector: FID, 230 $^{\circ}$ C



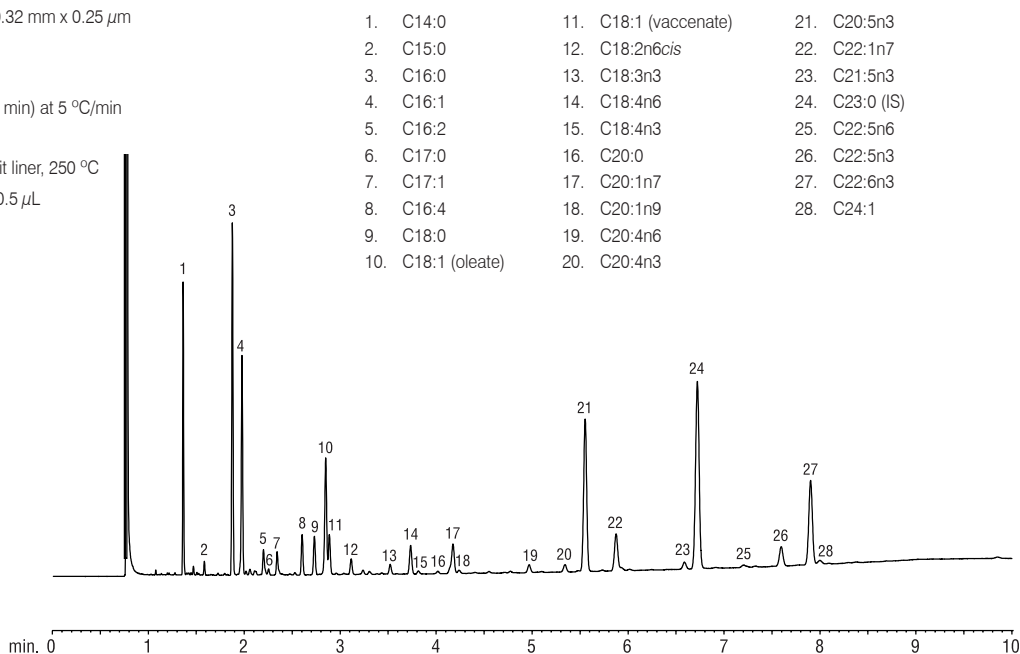
FAMES (Black Currant Seed Oil)

Column: DM-FAMEWAX, 30 m x 0.25 mm x 0.25 μ m
 Cat. No.: **7811**
 Index: CFR00365
 Oven Temp.: 165 $^{\circ}$ C (hold 30 min) to 220 $^{\circ}$ C (hold 15 min) at 1.5 $^{\circ}$ C/min
 Carrier Gas: He, 40 cm/sec
 Injection Temp.: 225 $^{\circ}$ C
 Detector: FID, 230 $^{\circ}$ C



FAMES (Marine Oil Standard)

Column: DM-FAMEWAX, 30 m x 0.32 mm x 0.25 μ m
 Cat. No.: **7813**
 Index: CFR00568
 Oven Temp.: 195 $^{\circ}$ C to 240 $^{\circ}$ C (hold 1 min) at 5 $^{\circ}$ C/min
 Carrier Gas: H₂, 62 cm/sec
 Injection: Split, 150:1, 3 mm ID split liner, 250 $^{\circ}$ C
 Sample: 12 mg/mL total FAMES, 0.5 μ L
 Detector: FID, 250 $^{\circ}$ C



Flavor Volatiles

Column: DM-1, 60 m x 0.32 mm x 0.50 μ m

Cat. No.: 7148

Index: CFR00536

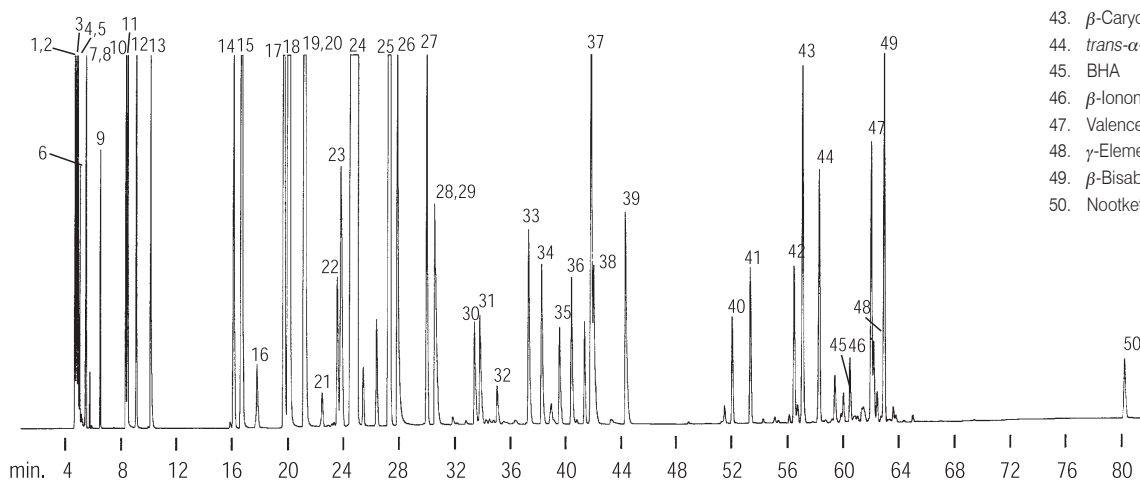
Oven Temp.: 70 °C (hold 15 min) to 190 °C (hold 5 min) at 2 °C/min

Carrier Gas: He, 20 cm/sec, 70 °C

Injection: Split, 20:1, 220 °C

Sample: Flavor volatiles mix, 0.8 μ LDetector: FID, 64 x 10⁻¹¹ AFS, 260 °C

- | | | | |
|-----------------------|-----------------------------|-----------------------------------|-------------------------------------|
| 1. Methanol | 11. Ethyl butyrate | 21. α -Phellandrene | 31. <i>trans</i> -Limonene monoxide |
| 2. Acetaldehyde | 12. Furfural | 22. α -Terpinene | 32. Citronellal |
| 3. Ethanol | 13. <i>trans</i> -2-Hexenal | 23. <i>p</i> -Cymene | 33. Terpinene-4-ol |
| 4. Acetone | 14. α -Thujene | 24. δ -Limonene | 34. α -Terpineol |
| 5. Isopropyl alcohol | 15. α -Pinene | 25. γ -Terpinene | 35. Decanal |
| 6. Methylene chloride | 16. Camphene | 26. Octanol | 36. <i>d/l</i> Carveol |
| 7. Hexane | 17. Sabinene | 27. Terpinolene | 37. Neral |
| 8. Ethyl acetate | 18. β -Pinene | 28. Nonanal | 38. Carvone |
| 9. Ethyl propionate | 19. Octanal | 29. Linalool | 39. Geranial |
| 10. <i>n</i> -Hexanal | 20. Myrcene | 30. <i>cis</i> -Limonene monoxide | 40. Neryl acetate |



Flavor Volatiles

Column: DM-Wax, 60 m x 0.53 mm x 1.00 μ m

Cat. No.: 7552

Index: CFR00537

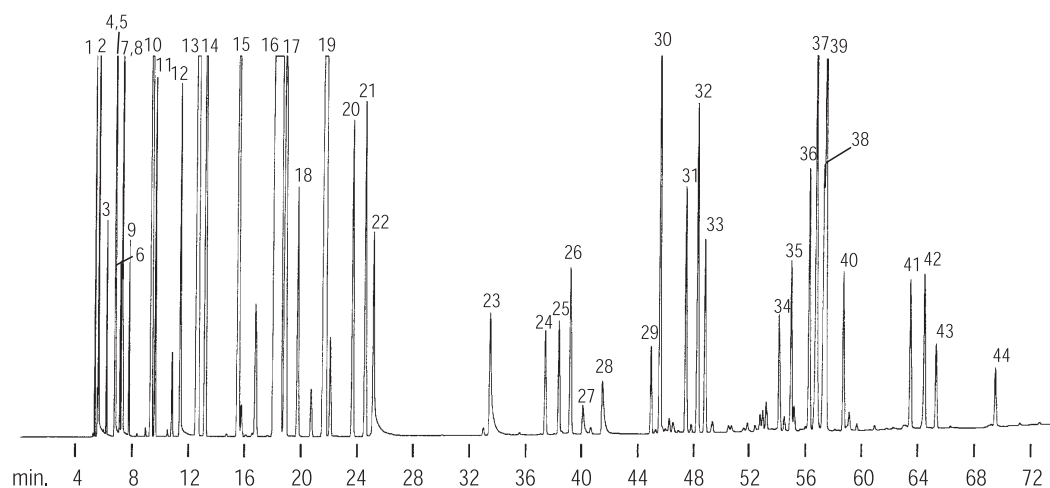
Oven Temp.: 70 °C (hold 15 min) to 190 °C (hold 5 min) at 2 °C/min

Carrier Gas: He, 20 cm/sec, 70 °C

Injection: Split, 20:1, 220 °C

Sample: Flavor volatiles mix, 0.8 μ LDetector: FID, 64 X 10⁻¹¹ AFS, 260 °C

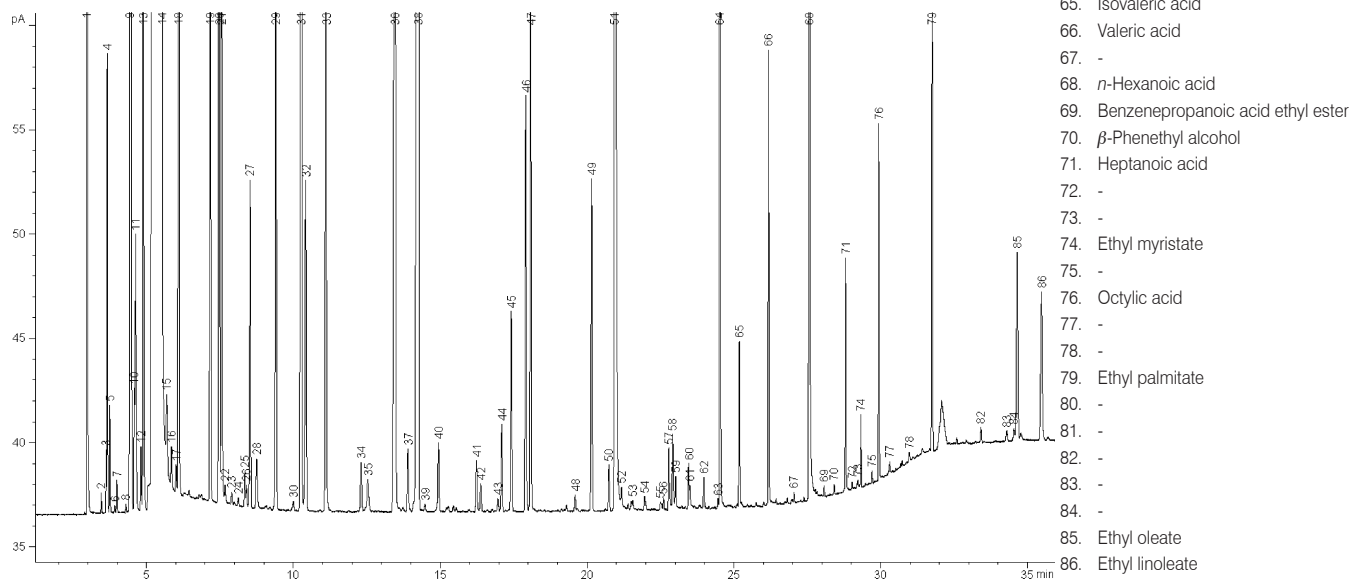
- | | | | |
|-----------------------|-----------------------------|--|-------------------------|
| 1. Hexane | 12. <i>n</i> -Hexanal | 23. Nonanal | 34. Neral |
| 2. Acetaldehyde | 13. β -Pinene | 24. <i>cis</i> -Limonene monoxide | 35. α -Terpineol |
| 3. Acetone | 14. Sabinene | 25. <i>trans</i> -Limonene | 36. Neryl acetate |
| 4. Methanol | 15. Myrcene | 26. Furfural | 37. Valencene |
| 5. Ethyl acetate | 16. δ -Limonene | 27. Citronellal | 38. Geranial |
| 6. Isopropyl alcohol | 17. 1,8-Cineole | 28. Decanal | 39. Carvone |
| 7. Ethanol | 18. <i>trans</i> -2-Hexenal | 29. Linalool | 40. Geranyl acetate |
| 8. Methylene chloride | 19. γ -Terpinene | 30. Octanol | 41. <i>d/l</i> Carveol |
| 9. Ethyl propionate | 20. <i>p</i> -Cymene | 31. <i>trans</i> - α -Bergamotene | 42. α -Ionone |
| 10. α -Pinene | 21. Terpinolene | 32. β -Caryophyllene | 43. <i>d/l</i> Carveol |
| 11. Ethyl butyrate | 22. Octanal | 33. Terpinene-4-ol | 44. β -Ionone |



Concentrated Liquors

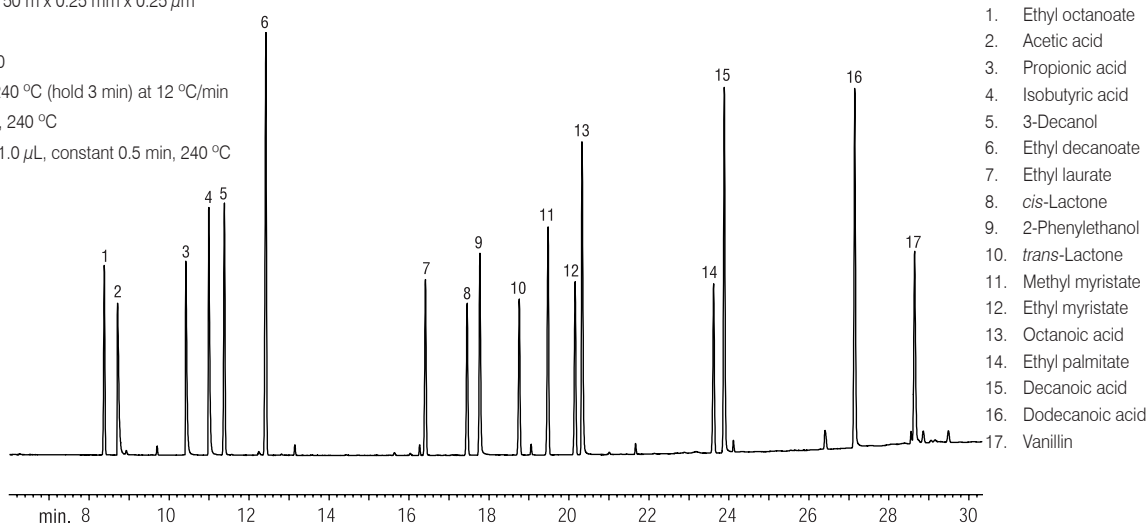
Column: DM-Wax, 30 m x 0.25 mm x 0.25 μ m
 Cat. No.: 7521
 Index: CFO00011
 Oven Temp.: 37 °C (hold 2 min) to 70 °C at 3 °C/min
 70 °C (hold 1 min) to 130 °C at 6 °C/min
 130 °C to 220 °C at 10 °C/min
 to 220 °C (hold 10 min)
 Carrier Gas: High purity nitrogen, 1 mL/min
 Injection: 260 °C, Split ratio 30:1
 Detector: FID, 260 °C

- | | | | |
|----------------------------|-------------------------------|------------------------|---------------------------------|
| 1. Acetaldehyde | 17. 2-Ethoxy butane | 33. <i>n</i> -Butanol | 49. Ethyl octanoate |
| 2. Propanal | 18. 2-Pentanone | 34. - | 50. - |
| 3. Isobutanal | 19. <i>sec</i> -Butyl alcohol | 35. - | 51. Acetic acid |
| 4. Acetone | 20. Ethyl butyrate | 36. Isoamyl alcohol | 52. Furfural |
| 5. Ethyl formate | 21. <i>n</i> -Propanol | 37. - | 53. - |
| 6. - | 22. - | 38. Ethyl caproate | 54. - |
| 7. - | 23. - | 39. - | 55. Benzaldehyde |
| 8. - | 24. - | 40. <i>n</i> -Pentanol | 56. Ethyl nonanoate |
| 9. Ethyl acetate + Acetal | 25. Ethyl isovalerate | 41. Acetoin | 57. Propionic acid |
| 10. Methanol | 26. Diethoxy isopentane | 42. - | 58. <i>L</i> -2,3-Butanediol |
| 11. 2-Butanone | 27. Diethoxy-3-methylbutane | 43. Propyl hexanoate | 59. Capryl alcohol |
| 12. 2-Methyl butyraldehyde | 28. - | 44. 2-Heptanol | 60. Isobutyric acid |
| 13. 3-Methyl butyraldehyde | 29. Isobutyl alcohol | 45. Ethyl heptanoate | 61. <i>meso</i> -2,3-Butanediol |
| 14. Ethanol | 30. Isoamyl acetate | 46. Ethyl lactate | 62. Hexyl hexanoate |
| 15. Ethyl propionate | 31. <i>sec</i> -Pentanol | 47. <i>n</i> -Hexanol | 63. Ethyl caprate |
| 16. Ethyl isobutyrate | 32. Ethyl valerate | 48. Butyl hexanoate | 64. <i>n</i> -Butanoic acid |



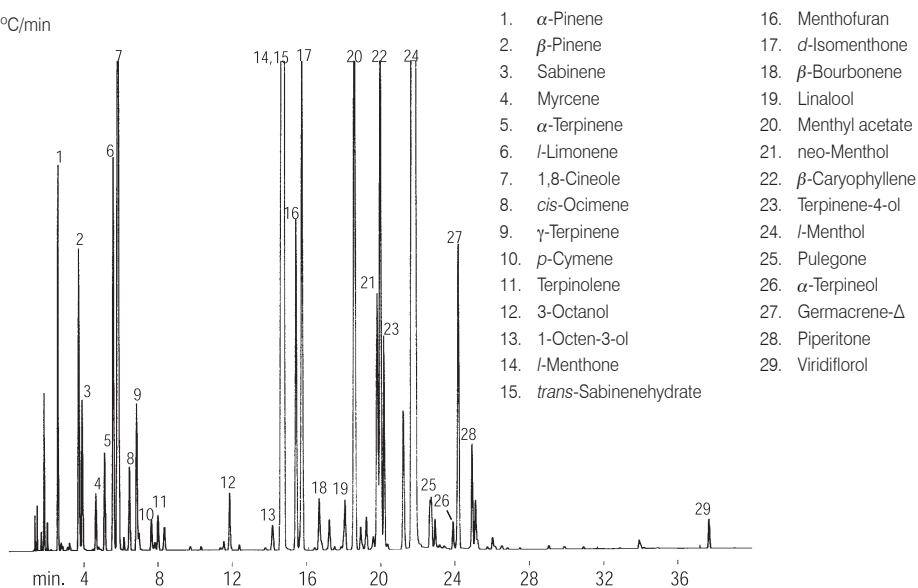
Alcoholic Standard: Acids and Esters

Column: DM-FFAP, 50 m x 0.25 mm x 0.25 μ m
 Cat. No.: 7672
 Index: CFR00500
 Oven Temp.: 70 °C to 240 °C (hold 3 min) at 12 °C/min
 Carrier Gas: H₂, 28 psi, 240 °C
 Injection: Splitless, 1.0 μ L, constant 0.5 min, 240 °C
 Detector: FID



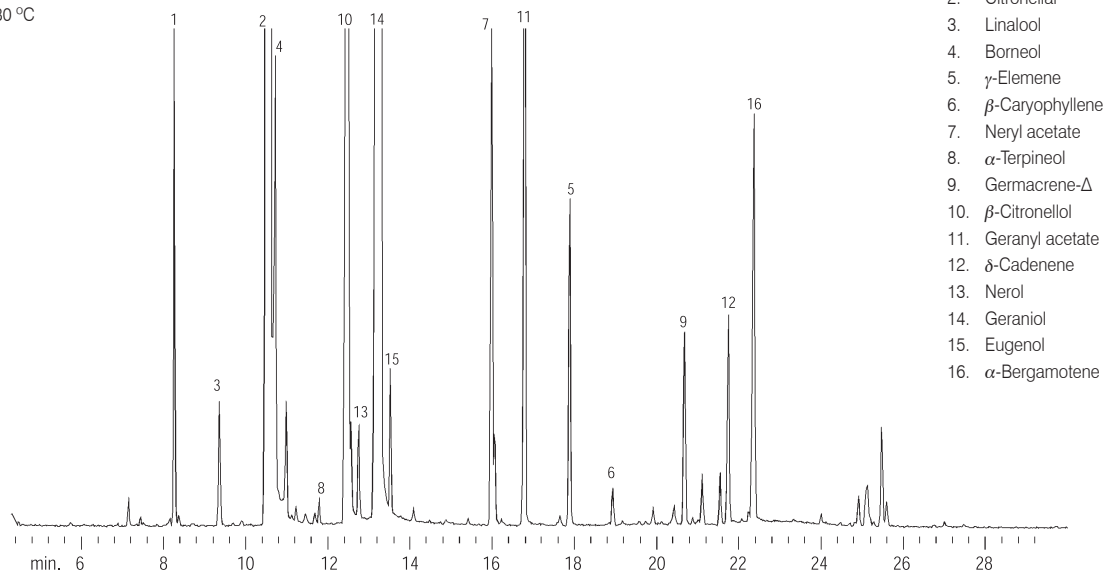
Peppermint Oil

Column: DM-Wax, 30 m x 0.25 mm x 0.50 μ m
 Cat. No.: 7521
 Index: CFR00141
 Oven Temp.: 75 °C (hold 4 min) to 240 °C at 4 °C/min
 Carrier Gas: H₂, 40 cm/sec, 75 °C
 Injection: Split, 1.0 μ L, 50:1, 250 °C
 Sample: Peppermint oil, 1.0 μ L
 Detector: FID, 16 x 10⁻¹¹ AFS, 250 °C



Citronella Java Oil

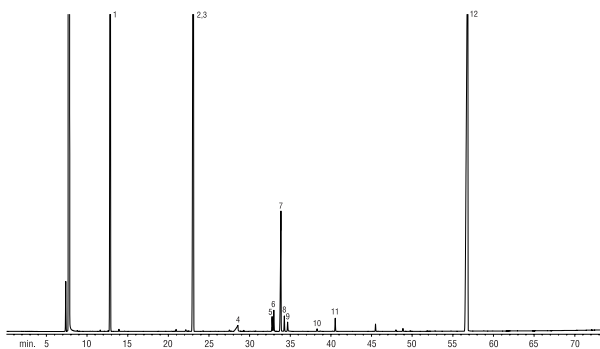
Column: DM-1, 60 m x 0.25 mm x 0.25 μ m
 Cat. No.: 7122
 Index: CFR00144
 Oven Temp.: 100 °C to 260 °C (hold 1 min) at 4 °C/min
 Carrier Gas: He, 30 cm/sec, 50 °C
 Injection: Split, 100 cc/min, 250 °C
 Sample: Citronella java oil, 1.0 μ L
 Detector: MS, 280 °C



Fragrance

Column: DM-1, 60 m x 0.25 mm x 0.25 μ m
 Cat. No.: 7122
 Index: CFR00657
 Oven Temp.: 50 °C to 270 °C at 3 °C/min
 Carrier Gas: He
 Injection: Split, 40:1, 285 °C
 Flow rate: 0.6 mL/min
 Sample: 5% FMA mix in acetone, 1.0 μ L
 Detector: FID, 300 °C

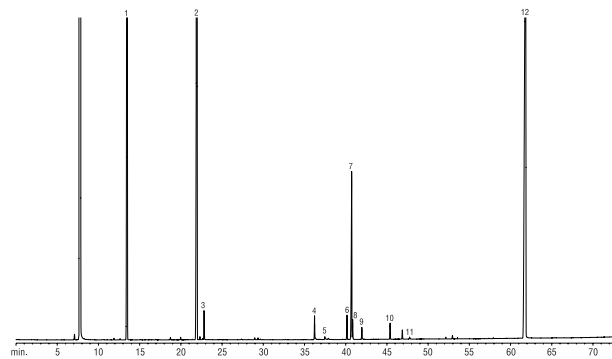
1. Ethyl butyrate
2. Limonene
3. Eucalyptol
4. Benzoic acid
5. Cinnamic aldehyde
6. Geraniol
7. Hydroxycitronellal
8. Thymol
9. Cinnamyl alcohol
10. Vanillin
11. Cinnamyl acetate
12. Benzyl salicylate



Fragrance

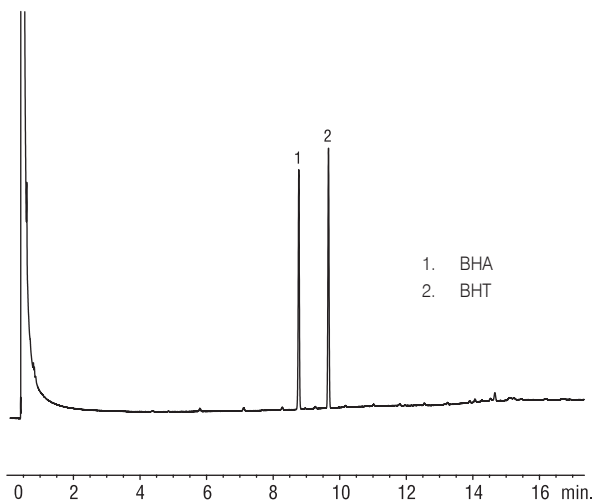
Column: DM-1701, 60 m x 0.25 mm x 0.25 μ m
 Cat. No.: 7322
 Index: CFR00658
 Oven Temp.: 50 °C to 270 °C at 3 °C/min
 Carrier Gas: He
 Injection: Split, 40:1, 285 °C
 Sample: 5% FMA mix in acetone, 1.0 μ L
 Detector: FID, 300 °C

1. Ethyl butyrate
2. Limonene
3. Eucalyptol
4. Geraniol
5. Benzoic acid
6. Cinnamic aldehyde
7. Hydroxycitronellal
8. Thymol
9. Cinnamyl alcohol
10. Cinnamyl acetate
11. Vanillin
12. Benzyl salicylate



BHA / BHT

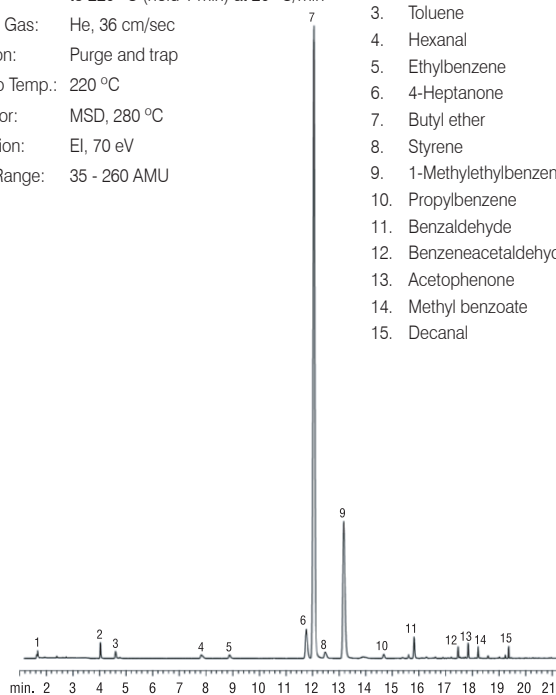
Column: DM-17, 30 m x 0.53 mm x 1.00 μ m
 Cat. No.: 7451
 Index: CFR00630
 Oven Temp.: 50 °C to 240 °C (hold 3 min) at 15 °C/min
 Carrier Gas: He, 60 cm/sec, 50 °C
 Injection: Direct, 280 °C
 Sample: 50 ppm BHA / BHT each in MeOH, 1.0 μ L
 Detector: FID, 280 °C



Food Packaging Volatiles

Column: DM-5MS, 30 m x 0.25 mm x 0.50 μ m
 Cat. No.: 8223
 Index: CFR00459
 Oven Temp.: 50 °C to 92 °C at 3 °C/min
 to 220 °C (hold 1 min) at 20 °C/min
 Carrier Gas: He, 36 cm/sec
 Injection: Purge and trap
 Desorb Temp.: 220 °C
 Detector: MSD, 280 °C
 Ionization: EI, 70 eV
 Scan Range: 35 - 260 AMU

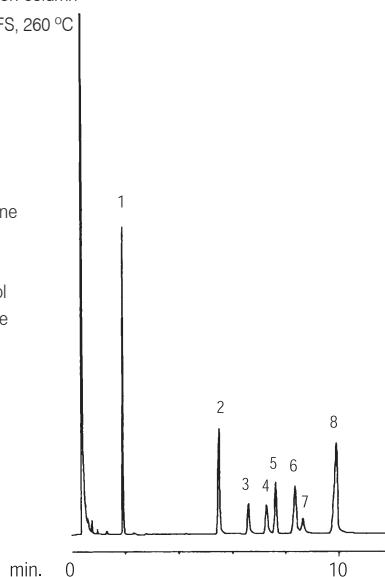
1. Tetrahydrofuran
2. 1-Butanol
3. Toluene
4. Hexanal
5. Ethylbenzene
6. 4-Heptanone
7. Butyl ether
8. Styrene
9. 1-Methylethylbenzene
10. Propylbenzene
11. Benzaldehyde
12. Benzeneacetaldehyde
13. Acetophenone
14. Methyl benzoate
15. Decanal



Neutral Sterols

Column: DM-225, 30 m x 0.25 mm x 0.25 μ m
 Cat. No.: 8421
 Index: CFR00431
 Oven Temp.: 260 °C constant
 Carrier Gas: He, 45 cm/sec, 240 °C
 Injection: Split, 30:1, 260 °C
 Sample: Neutral sterols and phytosterols,
 1.5 μ L, 200 ng on-column
 Detector: FID, 8 x 10⁻¹¹ AFS, 260 °C

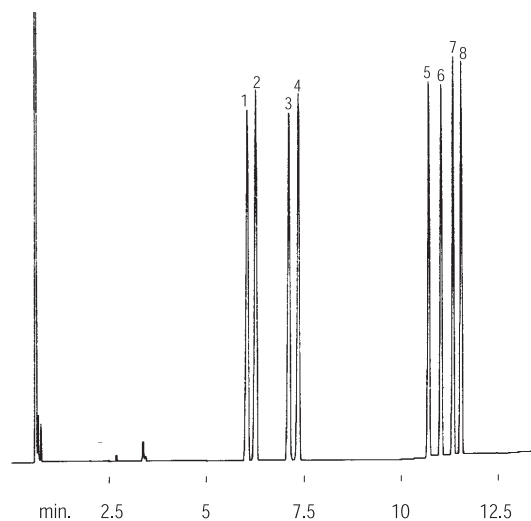
1. 5- α -Cholestane
2. Coprosterol
3. Cholesterol
4. Brassicasterol
5. Coprostanone
6. Campesterol
7. Stigmasterol
8. β -Sitosterol



Sugars (Alditol Acetates)

Column: DM-225, 30 m x 0.25 mm x 0.25 μ m
 Cat. No.: 8421
 Index: CFR00128
 Oven Temp.: 190 °C (hold 5 min) to 250 °C (hold 5 min) at 8 °C/min
 Carrier Gas: H₂, 42 cm/sec, 40 °C
 Injection: Split, 50:1, 260 °C
 Sample: Alditol acetates derivative, 0.5 μ L
 Detector: FID, 16 x 10⁻¹¹ AFS, 260 °C

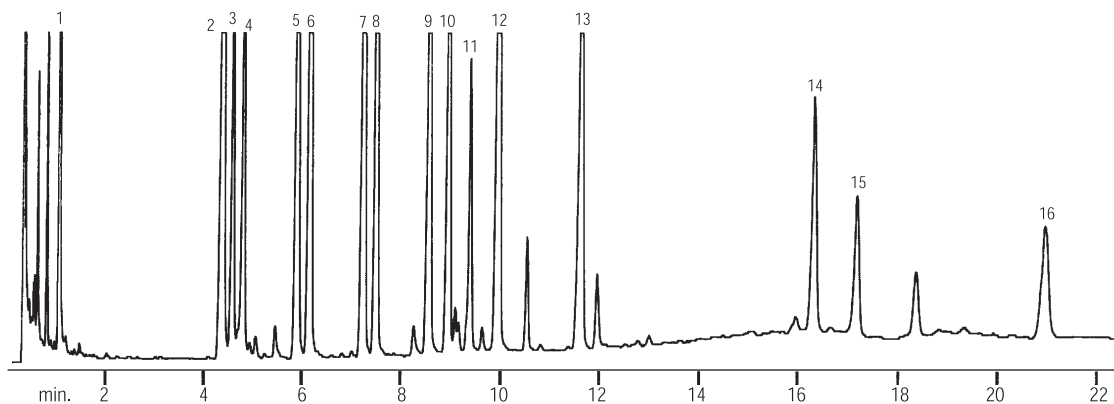
1. Rhamnitol
2. Fucitol
3. Ribitol
4. Arabinitol
5. Mannitol
6. Galactitol
7. Glucitol
8. Inositol



Sugars (Alditol Acetates)

Column: DM-2330, 30 m x 0.32 mm x 0.20.00 μ m
 Cat. No.: 8633
 Index: CFR00127
 Oven Temp.: 175 °C (hold 2 min) to 240 °C (hold 1 min) at 8 °C/min
 to 265 (hold 12 min) at 8 °C/min
 Carrier Gas: He, 80 cm/sec
 Injection: Split, 20:1, 275 °C
 Sample: Sugars, 0.6 μ L
 Detector: FID, 2 x 10⁻¹¹ AFS, 275 °C

- | | |
|-------------------|--------------------------------------|
| 1. Glyceraldehyde | 10. Galactitol |
| 2. Deoxyribitol | 11. Glucitol |
| 3. Rhamnitol | 12. Inositol |
| 4. Fucitol | 13. Glucoheptitol |
| 5. Ribitol | 14. <i>n</i> -Acetyl galactose amine |
| 6. Arabinitol | 15. <i>n</i> -Acetyl glucose amine |
| 7. Xylitol | 16. 2-Keto-3-deoxyoctanate |
| 8. Deoxyglucitol | |
| 9. Mannitol | |

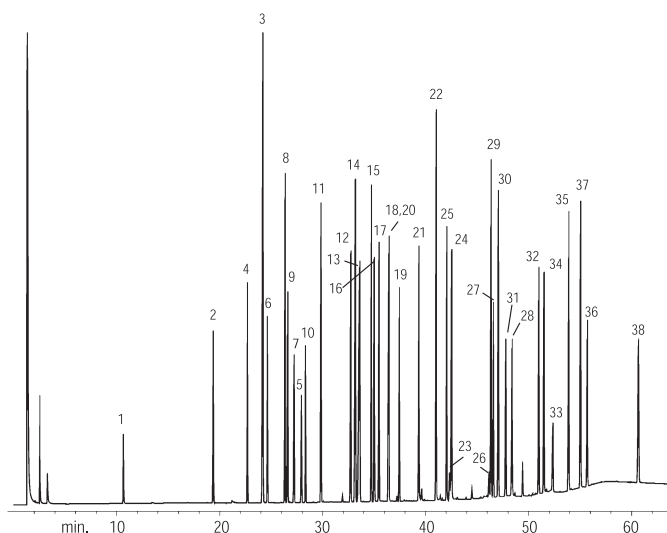


Basic Drugs (Underivatized)

Column: 30 m x 0.25 mm x 0.25 μ m
 Cat. No.: DM-35, #7921
 DM-5, #7221
 DM-200, #8321
 Oven Temp.: 100 °C to 325 °C (hold 10 min) at 4 °C/min
 Carrier Gas: He, 30 cm/sec, 100 °C
 Injection: Split, 50:1, 250 °C
 Sample: Basic drugs, 1.0 μ L, 1000 ng/ μ L
 Detector: FID, 1.28 x 10⁻¹⁰ AFS, 320 °C

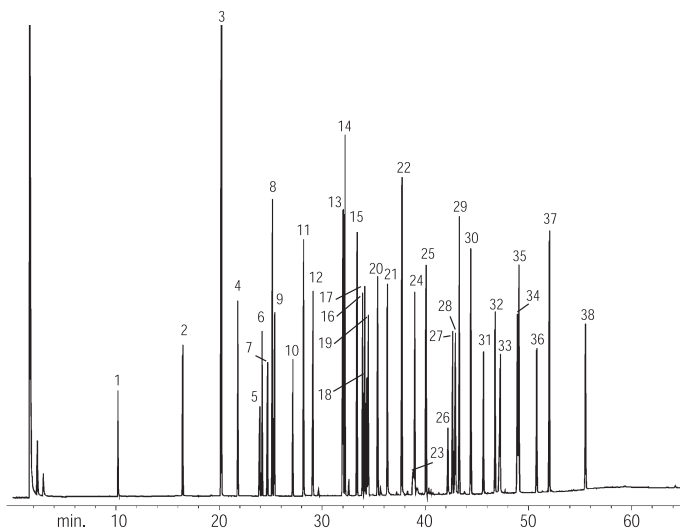
DM-35

Index: CPR00236



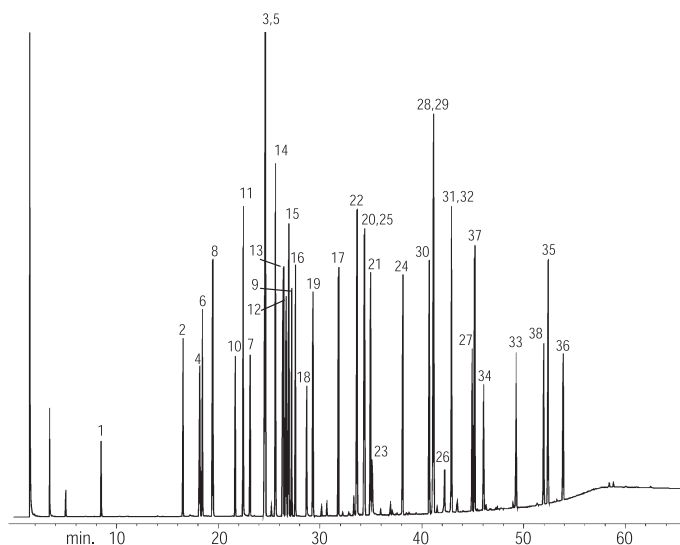
DM-5

Index: CPR00235



DM-200

Index: CPR00237

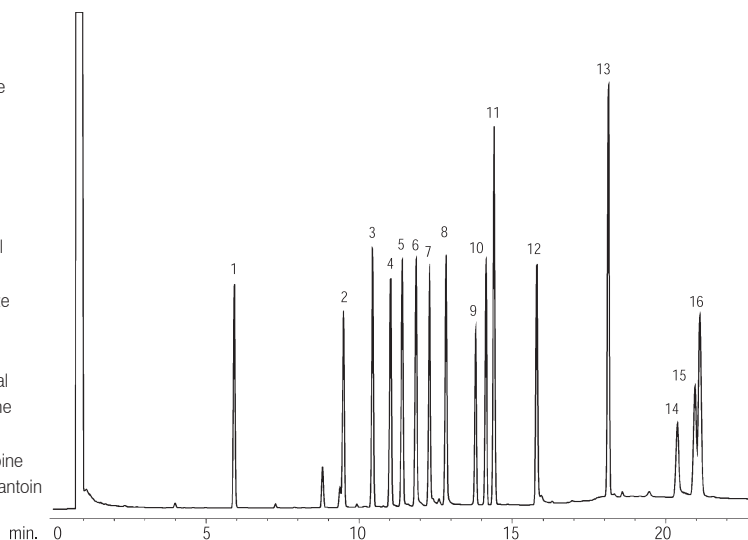


- | | |
|----------------------|--------------------|
| 1. Nicotine | 20. Bupivacaine |
| 2. Benzocaine | 21. Scopolamine |
| 3. Cotinine | 22. Codeine |
| 4. Meperidine | 23. Morphine |
| 5. Caffeine | 24. Diazepam |
| 6. Benzphetamine | 25. Chlorpromazine |
| 7. Ketamine | 26. Temazepam |
| 8. Diphenhydramine | 27. Flunitrazepam |
| 9. Lidocaine | 28. Bromazepam |
| 10. Phenyltoloxamine | 29. Prazepam |
| 11. Tripeleminamine | 30. Acetopromazine |
| 12. Phenothiazine | 31. Flurazepam |
| 13. Dextromethorphan | 32. Papaverine |
| 14. Methadone | 33. Clonazepam |
| 15. Amitriptyline | 34. Haloperidol |
| 16. Trimipramine | 35. Alprazolam |
| 17. Tetracaine | 36. Triazolam |
| 18. Pyrilamine | 37. Thioridazine |
| 19. Medazepam | 38. Trazodone |

Acidic / Neutral Drugs (Underivatized)

Column: DM-35, 30 m x 0.53 mm x 1.00 μ m
 Cat. No.: 7951
 Index: CPR00262
 Oven Temp.: 100 $^{\circ}$ C to 280 $^{\circ}$ C (hold 5 min) at 10 $^{\circ}$ C/min
 Carrier Gas: He, 40 cm/sec, 100 $^{\circ}$ C
 Injection: Splitless, 0.5 min, 250 $^{\circ}$ C
 Sample: Acidic / Neutral drugs, 1.0 μ L, 50 μ g/mL
 Detector: FID, 5.12 x 10⁻¹⁰ AFS, 250 $^{\circ}$ C

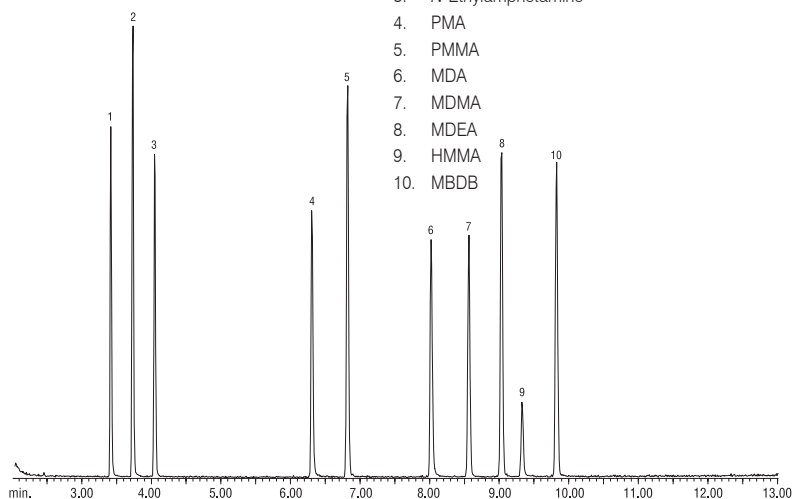
1. Ethosuximide
2. Barbitol
3. Methypylon
4. Aprobarbital
5. Butalbital
6. Amobarbital
7. Pentobarbital
8. Secobarbital
9. Meprobamate
10. Carisoprodal
11. Glutethimide
12. Phenobarbital
13. Methaqualone
14. Primidone
15. Carbamazepine
16. Diphenylhydantoin



Sympathomimetic Amines Drugs

Column: DM-35 Amine, 30 m x 0.25 mm x 0.50 μ m
 Cat. No.: 7821
 Index: CPR00574
 Oven Temp.: 150 $^{\circ}$ C to 240 $^{\circ}$ C at 7 $^{\circ}$ C/min
 Carrier Gas: He, 30 cm/sec
 Injection: Split, 250 $^{\circ}$ C
 Sample: Sympathomimetic amines drugs, 1.0 μ L, 1,000 ng/ μ L
 Detector: MS
 Scan Range: 40 - 450 AMU
 Ionization: EI, scan

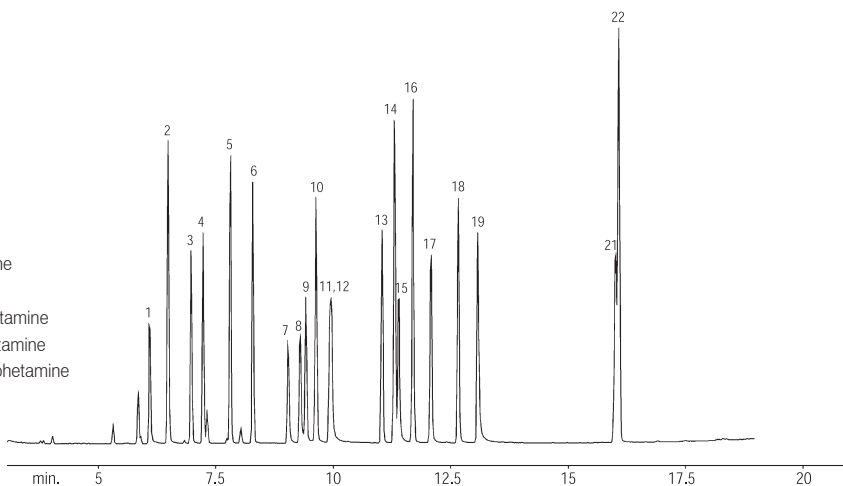
1. Amphetamine
2. Methamphetamine
3. N-Ethylamphetamine
4. PMA
5. PMMA
6. MDA
7. MDMA
8. MDEA
9. HMMA
10. MBDB



Sympathomimetic Amines Drugs

Column: DM-5 Amine, 30 m x 0.25 mm x 0.50 μ m
 Cat. No.: 7815
 Index: CPR00438
 Oven Temp.: 100 $^{\circ}$ C to 310 $^{\circ}$ C at 10 $^{\circ}$ C/min
 Injection: Split, 45 mL/min
 Detector: MS

- | | |
|-------------------------|---------------------------------------|
| 1. Phenylethylamine | 12. Pseudoephedrine |
| 2. Amphetamine | 13. Phenmetrazine |
| 3. Phentermine | 14. Phendimetrazine |
| 4. Methamphetamine | 15. Methylenedioxyamphetamine |
| 5. Fenfluramine | 16. Diethylpropion |
| 6. Mephentermine | 17. Methylenedioxymethamphetamine |
| 7. Cathinone | 18. Methylenedioxyethylamphetamine |
| 8. Phenylpropranolamine | 19. 4-Methyl-2,5-dimethoxyamphetamine |
| 9. Methcathinone | 20. Phenylephrine |
| 10. Nicotine | 21. Caffeine |
| 11. Ephedrine | 22. Benzphetamine |



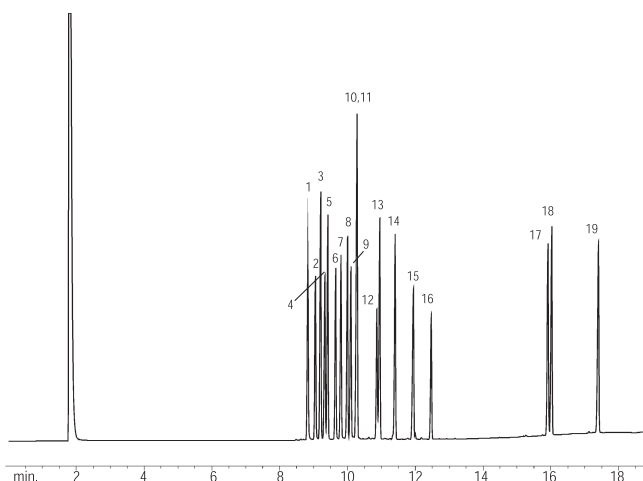
Applications

Pharmaceutical

Steroids, Anabolic

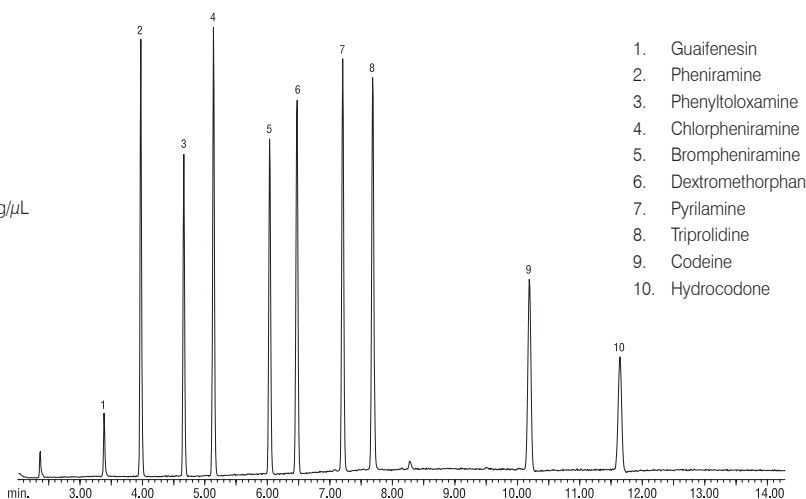
Column: DM-5, 30 m x 0.25 mm x 0.10 μ m
 Cat. No.: 7219
 Index: CPR00255
 Oven Temp.: 180 °C to 340 °C (hold 3 min) at 10 °C/min
 Carrier Gas: He, 35 cm/sec, 180 °C
 Injection: Split, 50:1, 280 °C
 Sample: Anabolic steroids, 0.5 μ L, 1,000 ng/ μ L
 Detector: FID, 1.28 x 10⁻¹⁰ AFS, 340 °C

- | | |
|---|--|
| 1. 5-Androstene-3 β ,17 β -diol | 11. Bolasterone |
| 2. 17 α -Methyl-5-androstene-3 β ,17 β -diol | 12. Oxymethalone |
| 3. 5 α -Androstan-17 β -ol-3-one | 13. 19-Nortestosterone-17-propionate |
| 4. 19-Nortestosterone | 14. Testosterone propionate |
| 5. 17 α -Methylandrostan-17 β -ol-3-one | 15. Fluoxymesterone |
| 6. Mesterolone | 16. 4-Chlorotestosterone-17-acetate |
| 7. Testosterone | 17. Testosterone-17 β -cypionate |
| 8. 17 α -Methyltestosterone | 18. 1-Dehydrotestosterone benzoate |
| 9. 1-Dehydrotestosterone | 19. 1-Dehydrotestosterone undecylenate |
| 10. 1-Dehydro-17 α -methyltestosterone | |



Cold Medicine

Column: DM-35 Amine, 30 m x 0.25 mm x 0.50 μ m
 Cat. No.: 7821
 Index: CPR00575
 Oven Temp.: 250 °C to 300 °C (hold 7 min) at 7 °C/min
 Carrier Gas: He, 30 cm/sec
 Injection: Split, 250 °C
 Sample: Underivatized cold medicine, 1.0 μ L, 1,000 ng/ μ L
 Detector: MS
 Scan Range 40 - 450 AMU
 Ionization EI, scan

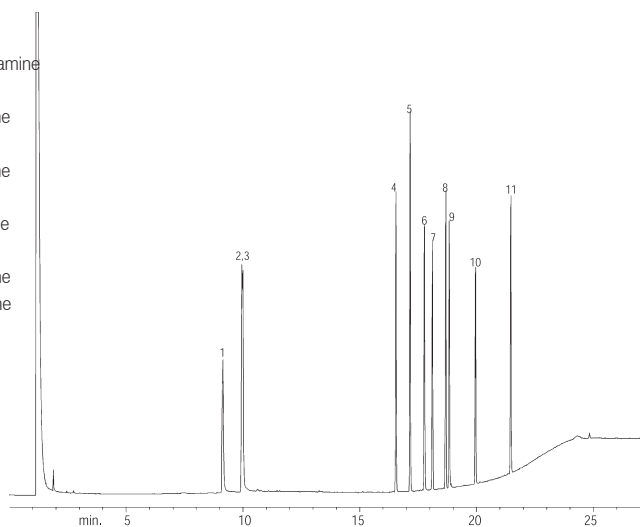


1. Guaifenesin
2. Pheniramine
3. Phenyltoloxamine
4. Chlorpheniramine
5. Brompheniramine
6. Dextromethorphan
7. Pyrilamine
8. Triprolidine
9. Codeine
10. Hydrocodone

Antihistamines

Column: DM-5 Amine, 30 m x 0.32 mm x 1.00 μ m
 Cat. No.: 7817
 Index: CPR00247
 Oven Temp.: 130 °C (hold 5 min) to 305 °C (hold 5 min) at 10 °C/min
 Carrier Gas: H₂, 43 cm/sec, 130 °C
 Injection: Split, 50:1, 305 °C
 Sample: Antihistamines, 1.0 μ L, 1,000 ng/ μ L
 Detector: FID, 6.4 x 10⁻¹¹ AFS, 305 °C

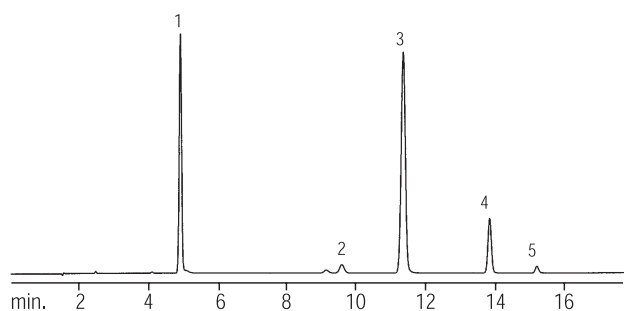
1. Phenylpropanolamine
2. Ephedrine
3. Pseudoephedrine
4. Pheniramine
5. Diphenhydramine
6. Doxylamine
7. Phenyltoloxamine
8. Methapyrilene
9. Chlorpheniramine
10. Brompheniramine
11. Triprolidine



Organic Volatile Impurities (USP 467)

Column: DM-624, 30 m x 0.53 mm x 3.00 μ m + 5 m Guard column
 Cat. No.: 7751
 Index: CPR00259
 Oven Temp.: 40 °C (hold 20 min) to 240 °C (hold 10 min) at 35 °C/min
 Carrier Gas: He, 35 cm/sec, 35 °C
 Injection: Split, 2:1, 180 °C
 Detector: FID, 1.25 x 10⁻¹⁰ AFS, 260 °C

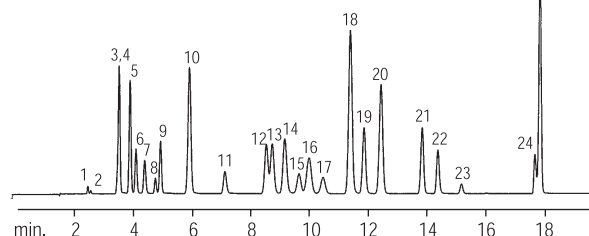
1. Methylene chloride
2. Chloroform
3. Benzene
4. Trichloroethylene
5. 1,4-Dioxane



Organic Volatile Impurities

Column: DM-624, 30 m x 0.53 mm x 3.00 μ m
 Cat. No.: 7751
 Index: CPR00261
 Oven Temp.: 35 °C (hold 10 min) to 100 °C at 5 °C/min
 to 240 °C (hold 5 min) at 25 °C/min
 Carrier Gas: He, 35 cm/sec, 35 °C
 Injection: Split, 2:1, 220 °C
 Detector: FID, 1.05 x 10⁻¹¹ AFS, 240 °C

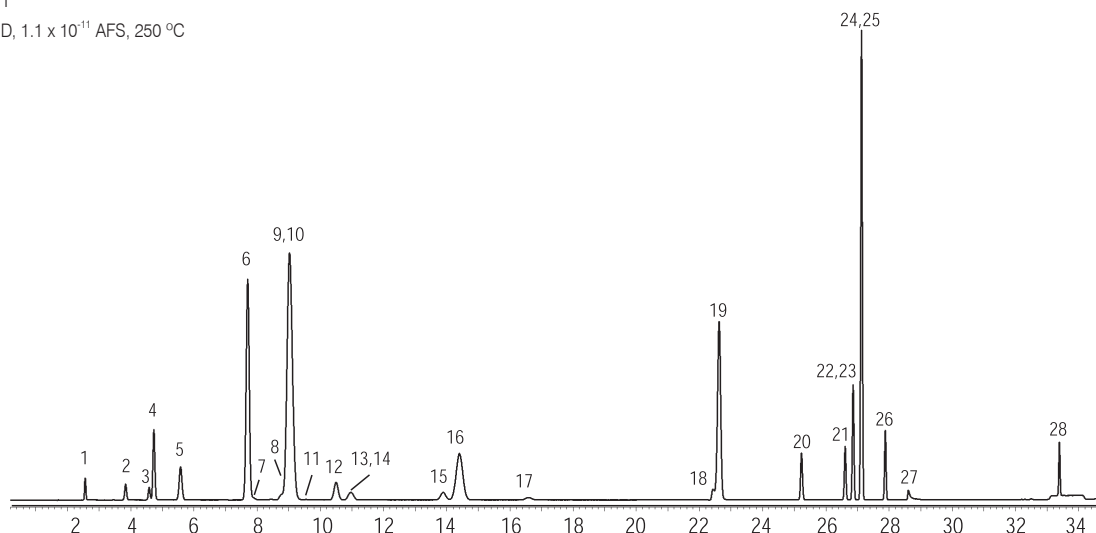
- | | | |
|-----------------------|---------------------------|------------------------|
| 1. Ethylene oxide | 10. -Hexane | 19. 1,2-Dichloroethane |
| 2. Methanol | 11. <i>n</i> -Propanol | 20. Heptane |
| 3. Ethanol | 12. Methyl ethyl ketone | 21. Trichloroethylene |
| 4. Diethyl ether | 13. Ethyl acetate | 22. <i>n</i> -Butanol |
| 5. 1,1-Dichloroethene | 14. Tetrahydrofuran | 23. 1,4-Dioxane |
| 6. Acetone | 15. Chloroform | 24. Pyridine |
| 7. Isopropanol | 16. 1,1,1-Trichloroethane | 25. Toluene |
| 8. Acetonitrile | 17. Carbon tetrachloride | |
| 9. Methylene chloride | 18. Benzene | |



EP Class 1 and Class 2 Solvents

Column: DM-624, 30 m x 0.53 mm x 3.00 μ m
 Cat. No.: 7751
 Index: CPR00553
 Oven Temp.: 40 °C (hold 20 min) to 240 °C (hold 20 min) at 10 °C/min
 Carrier Gas: H₂, 35 cm/sec
 Injection: 1 mL Headspace injection, using samples shaken and heated
 at 80 °C for 15 min, 200 °C
 Split Ratio: 2:1
 Detector: FID, 1.1 x 10⁻¹¹ AFS, 250 °C

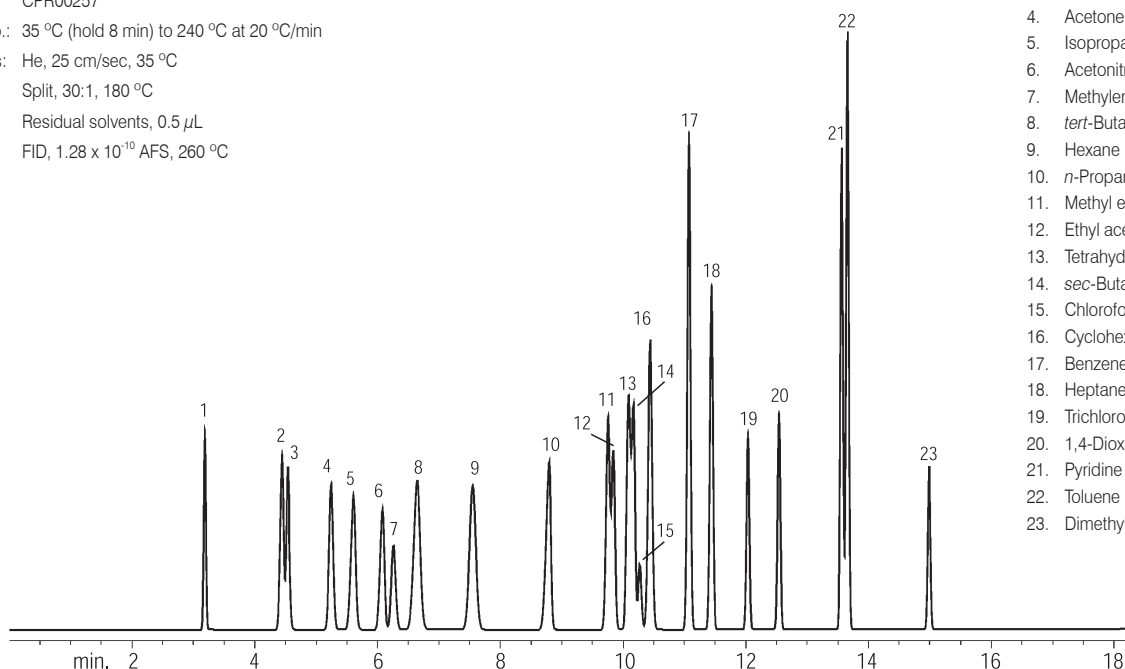
- | | | |
|-----------------------------------|---------------------------|-----------------------------------|
| 1. Methanol | 10. 1,1,1-Trichloroethane | 19. Toluene |
| 2. 1,1-Dichloroethene | 11. Carbon tetrachloride | 20. 2-Hexanone |
| 3. Acetonitrile | 12. Benzene | 21. Chlorobenzene |
| 4. Dichloromethane | 13. 1,2-Dimethoxyethane | 22. DMF |
| 5. Hexane | 14. 1,2-Dichloroethane | 23. Ethylbenzene |
| 6. <i>cis</i> -1,2-Dichloroethene | 15. 1,1,2-Trichloroethene | 24. <i>m</i> -Xylene |
| 7. Nitromethane | 16. Methyl cyclohexane | 25. <i>p</i> -Xylene |
| 8. Chloroform | 17. 1,4-Dioxane | 26. <i>o</i> -Xylene |
| 9. Cyclohexane | 18. Pyridine | 27. <i>N,N</i> -Dimethylacetamide |
| | | 28. 1,2,3,4-Tetrahydronaphthalene |



Residual Solvents

Column: DM-624, 30 m x 0.53 mm x 3.00 μ m
 Cat. No.: 7751
 Index: CPR00257
 Oven Temp.: 35 $^{\circ}$ C (hold 8 min) to 240 $^{\circ}$ C at 20 $^{\circ}$ C/min
 Carrier Gas: He, 25 cm/sec, 35 $^{\circ}$ C
 Injection: Split, 30:1, 180 $^{\circ}$ C
 Sample: Residual solvents, 0.5 μ L
 Detector: FID, 1.28×10^{-10} AFS, 260 $^{\circ}$ C

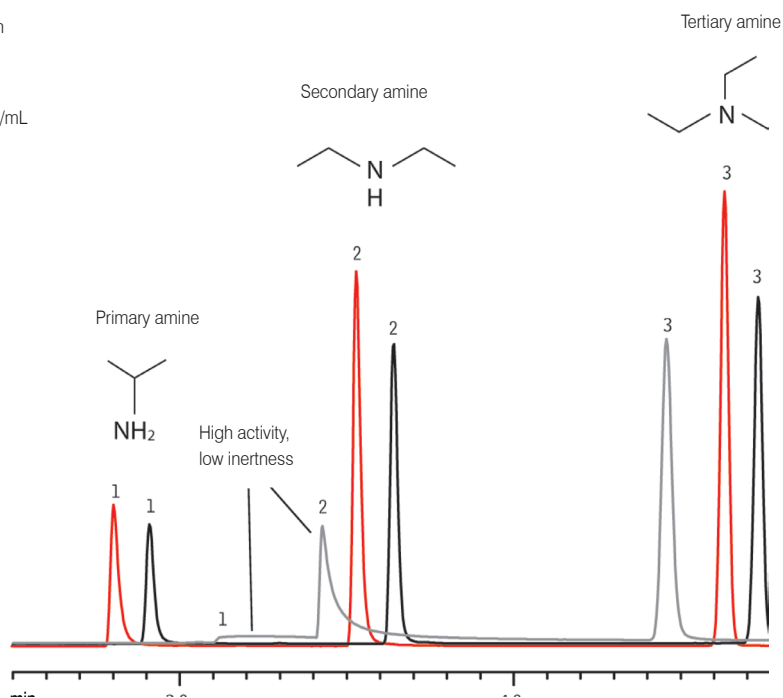
1. Methanol
2. Ethanol
3. Ether
4. Acetone
5. Isopropanol
6. Acetonitrile
7. Methylene chloride
8. *tert*-Butanol
9. Hexane
10. *n*-Propanol
11. Methyl ethyl ketone
12. Ethyl acetate
13. Tetrahydrofuran
14. *sec*-Butanol
15. Chloroform
16. Cyclohexane
17. Benzene
18. Heptane
19. Trichloroethylene
20. 1,4-Dioxane
21. Pyridine
22. Toluene
23. Dimethyl formamide



Primary, Second and Tertiary Amines

Column: DM-624MS, 30 m x 0.32 mm x 1.80 μ m
 Cat. No.: 8838
 Index: CPR1162
 Oven Temp.: 50 $^{\circ}$ C (hold 1 min) to 200 $^{\circ}$ C (hold 5 min) at 20 $^{\circ}$ C/min
 Carrier Gas: He, 37 cm/sec
 Injection: Split, 20:1, 1.0 μ L, 250 $^{\circ}$ C
 Sample: Primary, second and tertiary amines in DMSO, 100 μ g/mL
 Detector: FID, 250 $^{\circ}$ C

1. Isopropylamine 100 μ g/mL
2. Diethylamine 100 μ g/mL
3. Triethylamine 100 μ g/mL



Industry Index

Food	214
Environmental.....	229
Pharmaceutical	231
Others.....	232

Product Index

ProElut™ BaP

Determination of Benzopyrene Originating from Vegetable Oil.....	224
--	-----

ProElut™ PLS

Determination of Phenols in Water.....	229
Determination of Sulfonamides in Animal Tissue	218
Determination of Tetracyclines in Animal Tissue.....	225
Determination of Tetracyclines in Milk and Dairy Products.....	228
Determination of Tetracyclines in Serum.....	231

ProElut™ PLS GLASS

Determination of Migration of Bisphenol A (BPA) from Plastic Baby Bottles.....	232
Determination of Phthalate Esters (PAEs) in Water.....	230

ProElut™ PXC

Determination of β -Agonist Drugs in Animal Tissue	222
Determination of Fungicides in Fruit Juice.....	226
Determination of Histamine Originating from Aquatic Products.....	214
Determination of Melamine in Milk and Dairy Products.....	216
Determination of Sulfonamides in Milk and Milk Powder.....	220

Determination of Histamine Originating from Aquatic Products

1. Scope of application

For determination of histamine in aquatic products

2. Sample preparation / extraction

2.1. Weighing

Smoked fish and other dried samples: Weigh 2.5 g of sample (accurate to 0.01 g) in 50 mL centrifuge tube.

Tuna and other wet samples: Weigh 5.0 g of sample (accurate to 0.01 g) in 50 mL centrifuge tube.

2.2. Extraction of histamine

Add 20 mL histamine extract* to centrifuge tube, vortex 1 min, shock in thermostatic water bath for 30 min at 60 °C, centrifuge at 4,000 rpm for 10 min. Take 6 mL of supernatant and adjust the pH to be between 2 - 3 with 50% H₃PO₄ as the sample solution to be purified.

*Histamine extract: MeOH:50 mM KH₂PO₄ = 1:1

3. Sample purification

ProElut™ PXC 150 mg / 6 mL (**Cat#68204**)

Condition: 6 mL MeOH / 6 mL H₂O

Load: 6 mL supernatant

Wash 1: 6 mL 0.1 M HCl

Wash 2: 6 mL solution of NH₄OH:MeOH:H₂O = 5:5:90

Elute: 6 mL solution of NH₄OH:MeOH:H₂O = 5:60:35

Reconstitute: Reconstitute to 6 mL with elution solvent

4. HPLC method

Column: Inspire™ 5 μm C18, 150 x 4.6 mm (**Cat#81001**)

Mobile Phase: A: MeOH, B: Phosphoric acid - triethylamine buffer*, A:B = 40:60

Flow Rate: 1.0 mL/min

Temperature: 30 °C

Detection: FLD Ex: 345 nm, Em: 445 nm

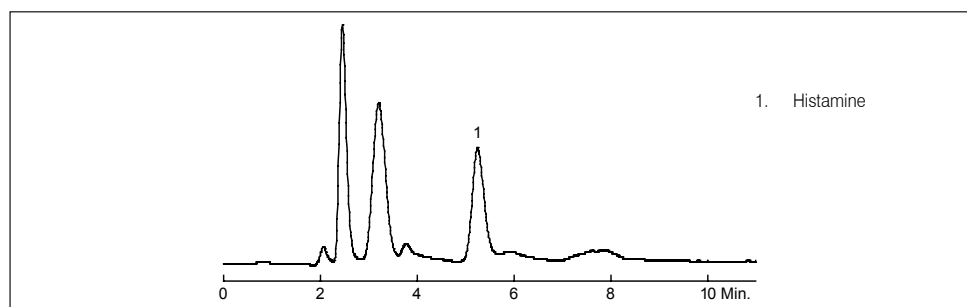
Injection Volume: 10 μL

Injection Procedure: 7.5 μL *o*-Phthalaldehyde (OPA) + 10 μL sample + 7.5 μL OPA

*Phosphoric acid - triethylamine buffer: Add 12.5 mL triethylamine and 25.7 mL phosphoric acid to 1 L deionized water

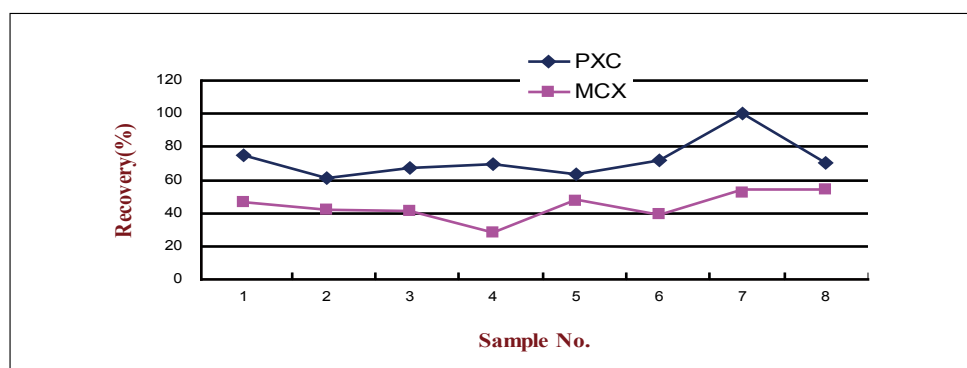
5.1. Recovery

Compounds	Spike Level (mg/kg)	Recovery
Histamine	10	89.96
	10	90.04
	20	73.04
	20	71.50
	40	59.98
	40	53.63



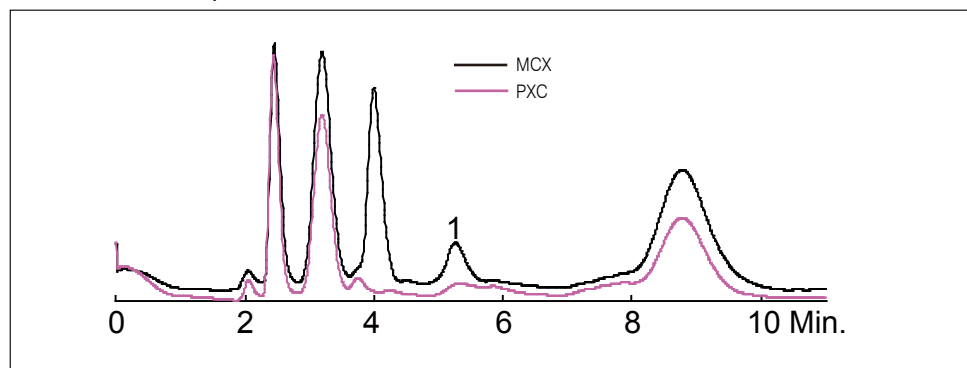
Chromatogram of aquatic products extracts - spiked histamine in aquatic products (10 mg/kg)

5.2. Recovery rate comparison



Samples No. 1 - 6 show the internal standard added in sample. Samples No. 7 and No. 8 show the internal standard added in sample extracting solution. Both methods exhibit stable recovery, the recovery of PXC treatment is better than that of MCX treatment.

5.3. Purification comparison



Applications

Determination of Melamine in Milk and Dairy Products

1. Scope of application

For determination of melamine in milk and dairy products

2. Sample preparation

2.1. Milk and milk powder

Dilute milk (2 mL) or milk powder (1 g) with 5 mL of trichloroacetic acid aqueous solution (10 g/L) in a 15 mL centrifuge tube, add 0.5 mL lead acetate aqueous solution (22 g/L) and 2 mL chloroform, vortex and centrifuge 2 min at 3,000 rpm, collect supernatant, add 5 mL trichloroacetic acid aqueous solution (10 g/L) to residue, vortex and centrifuge 2 min at 3,000 rpm, collect and combine supernatants.

2.2. Cream candy and cookies

Grind 1 g sample with sand into powder in a mortar, add powder to a 50 mL centrifuge tube, rinse the mortar with 15 mL of trichloroacetic acid aqueous solution (10 g/L), transfer solution to centrifuge tube then shake, add 1 mL lead acetate aqueous solution (22 g/L) and 5 mL chloroform, vortex and centrifuge 2 min at 3,000 rpm, collect supernatant, add 15 mL trichloroacetic acid aqueous solution (10 g/L) to residue, vortex and centrifuge 2 min at 3,000 rpm, collect and combine supernatants.

3. Sample purification

ProElut™ PXC 60 mg / 3mL (**Cat#68203**)

Condition: 3 mL MeOH / 3 mL H₂O

Load*: supernatant

Wash 1: 3 mL deionized water

Wash 2: 3 mL MeOH

Elute: 3 mL 5 % NH₄OH in MeOH

Reconstitute: Evaporate at 50 °C by N₂, reconstitute to 1 mL with MeOH:H₂O (20:80, V / V) solution

*12 mL reservoir (**Cat#4810**) and adaptor (**Cat#4803**) is available for large volume sample

4. HPLC method

Column: Inspire™ 5 μm C18, 150 x 4.6 mm (**Cat#81001**)

Mobile Phase : Buffer:MeCN = 92:8

Flow Rate: 1.0 mL/min

Temperature: 30 °C

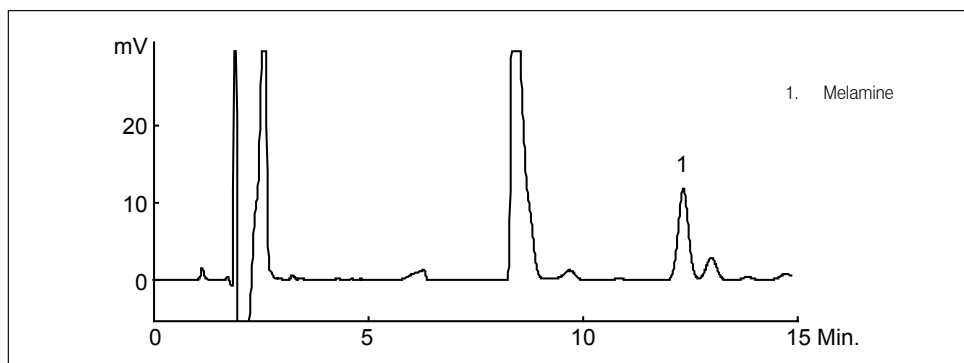
Detection: UV 240 nm

Injection Volume: 20 μL

Buffer: dilute 2.02 g sodium 1-heptanesulfonate and 2.10 g citric acid with water to total volume 1,000 mL

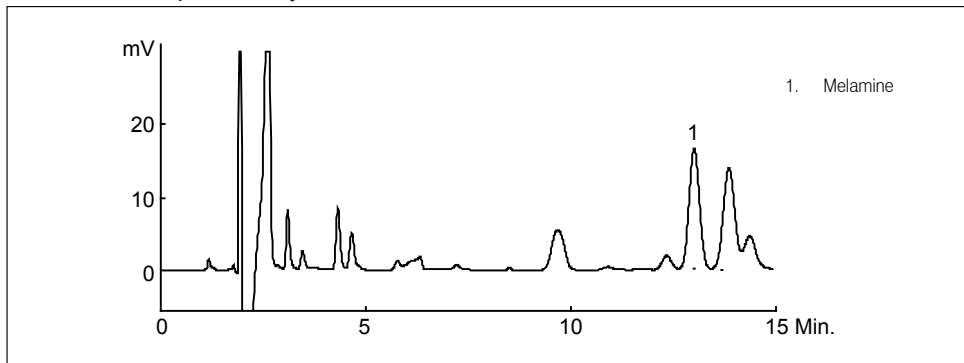
5. Recovery

5.1. Milk powder sample recovery



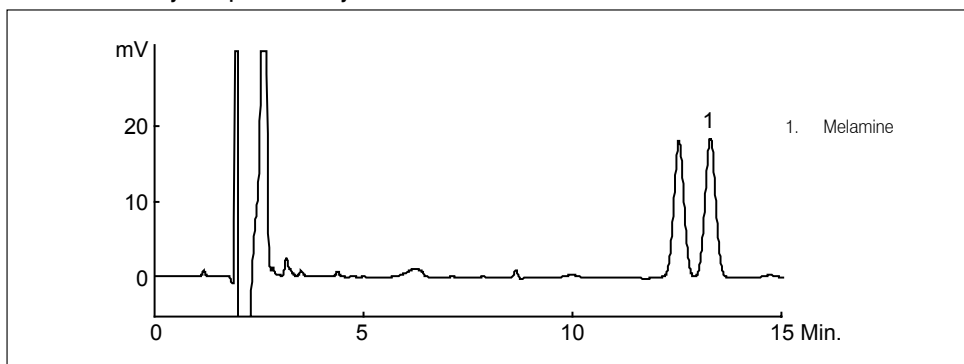
Chromatogram of milk powder extracts - spiked melamine in milk powder, 0.5 mg/kg

5.2. Cookies sample recovery



Chromatogram of cookies extracts - spiked melamine in cookies, 0.5 mg/kg, recovery: 85.9%

5.3. Cream candy sample recovery



Chromatogram of cream candy extracts - spiked melamine in cream candy, 0.5 mg/kg, recovery: 95.9%

Determination of Sulfonamides in Animal Tissue

1. Scope of application

Used for determination of sulfonamides in poultry, meat and aquatic product

2. Sample preparation

Weigh 5 g sample, add 5 g anhydrous sodium sulfate and 25 mL ethyl acetate, homogenize at 10,000 rpm for 2 min, centrifuge at 4,000 rpm for 2 min, collect ethyl acetate layer. Repeat 25 mL ethyl acetate extraction, combined ethyl acetate extracts, and vacuum distillation at 30 °C to near dry. Add 1 mL methanol, 2 mL 1% acetic acid and 3 mL *n*-hexane to the distillation flask, vortex 1 min, then transfer to 15 mL centrifuge tube. Repeat the dissolution process, add mixture to the centrifuge tube, vortex 1 min, centrifuge 1 min at 4,000 rpm, discard the hexane. Add 6 mL *n*-hexane and repeat the operation. Finally, add 6 mL deionized water to the lower layer.

3. Sample purification

ProElut™ PLS 60 mg / 3mL (Cat#68003)

Condition: 3 mL MeOH / 3 mL H₂O

Load: Add sample

Wash 1: 3 mL H₂O

Wash 2: 3 mL MeOH:H₂O = 5:95

Elute: 5 mL MeOH

Reconstitute: Evaporate at 30 °C by N₂, reconstitute to 1 mL with mobile phase

4. HPLC method

Column: Inspire™ 5 μm C18, 250 x 4.6 mm (Cat#81006)

Mobile Phase: A: MeCN, B: 2 % CH₃COOH in H₂O

Flow Rate: 1.0 mL/min

Temperature: 35 °C

Detection: UV 270 nm

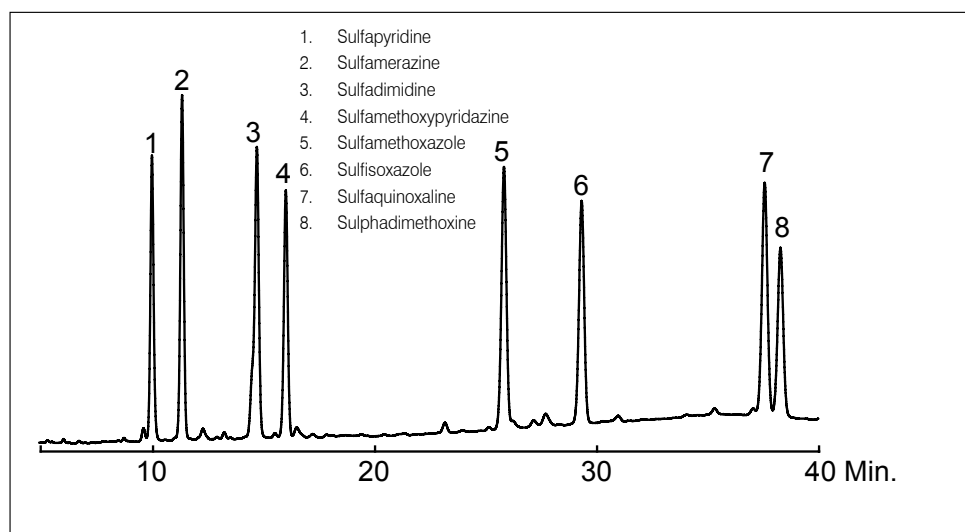
Injection Volume: 20 μL

Gradient:

Time / Min.	0	30	40	41	50
A	12	25	25	12	12
B	88	75	75	88	88

5. Recovery

Compounds	Spike Level (mg/kg)	Recovery (%)	RSD (%) (n = 4)
Sulfapyridine	0.1	79.8	5.5
	1.0	81.3	2.8
Sulfamerazine	0.1	89.5	6.4
	1.0	91.3	4.7
Sulfadimidine	0.1	94.3	5.2
	1.0	92.7	2.9
Sulfamethoxypridazine	0.1	88.5	5.1
	1.0	86.2	3.9
Sulfamethoxazole	0.1	84.6	5.3
	1.0	82.9	3.2
Sulfisoxazole	0.1	94.1	4.7
	1.0	92.7	3.9
Sulfaquinoxaline	0.1	88.9	3.1
	1.0	91.3	4.5
Sulphadimethoxine	0.1	82.7	4.9
	1.0	94.2	2.6



Chromatogram of sulfonamides - spiked 8 sulfonamides in animal tissue (0.1 mg/kg)

Determination of Sulfonamides in Milk and Milk Powder

1. Scope of application

Used for determination of sulfonamides in milk and milk powder

2. Sample preparation

To 15 mL milk (or 3 g milk powder in 15 mL H₂O), add 15 mL acetonitrile, vortex for 2 min, centrifuge at 6,000 rpm for 5 min, transfer 20 mL supernatant to another centrifuge tube, and add 15 mL *n*-hexane, vortex for 2 min, centrifuge at 6,000 rpm for 2 min, then discard the *n*-hexane. Repeat 15 mL *n*-hexane extraction. Add 15 mL ethyl acetate to the lower layer, vortex for 2 min, centrifuge at 6,000 rpm for 2 min, and collect supernatant. Repeat 15 mL ethyl acetate extraction, and combine supernatants. Vacuum evaporate the ethyl acetate layer to near dry at 30 °C, reconstitute with 10 mL 2% phosphoric acid.

3. Sample purification

ProElut™ PXC 200 mg / 6 mL (Cat#68212)

Condition: 6 mL MeOH / 6 mL H₂O

Load: Add sample

Wash 1: 6 mL H₂O

Wash 2: 6 mL MeOH

Elute: 6 mL MeOH (5 % NH₄OH)

Reconstitute: Vacuum evaporation at 30 °C, reconstitute to 1 mL with mobile phase

4. HPLC method

Column: Inspire™ 5 μm C18, 250 x 4.6 mm (Cat#81006)

Mobile Phase: A: MeCN, B: 2 % CH₃COOH in H₂O

Flow Rate: 1.0 mL/min

Temperature: 35 °C

Detection: UV 270 nm

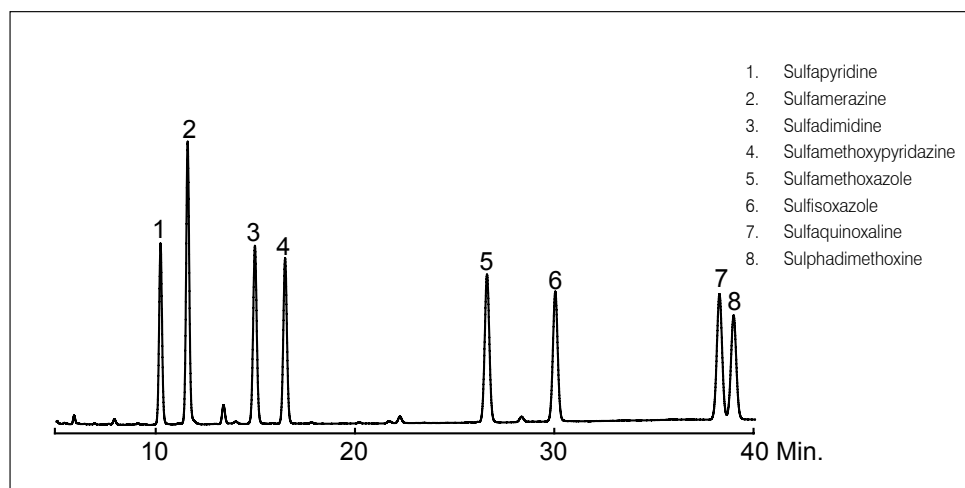
Injection Volume: 20 μL

Gradient:

Time / Min.	0	30	38	39	45
A	12	25	25	12	12
B	88	75	75	88	88

5. Recovery

Compounds	Spike Level (mg/kg)	Recovery (%)	RSD (%) (n = 4)
Sulfapyridine	0.1	78.4	4.1
	0.5	97.0	2.9
Sulfamerazine	0.1	82.3	4.6
	0.5	96.0	2.3
Sulfadimidine	0.1	83.5	4.8
	0.5	96.0	2.5
Sulfamethoxy pyridazine	0.1	82.0	3.2
	0.5	98.0	2.3
Sulfamethoxazole	0.1	84.3	3.9
	0.5	101.5	2.5
Sulfisoxazole	0.1	75.4	3.4
	0.5	91.8	3.8
Sulfaquinoxaline	0.1	77.8	4.2
	0.5	96.2	3.1
Sulphadimethoxine	0.1	77.5	5.2
	0.5	97.0	2.6



Chromatogram of milk extracts - spiked 8 sulfonamides in milk (0.1 mg/kg)

Determination of β - Agonist Drugs in Animal Tissue

1. Scope of application

Used for determination of clenbuterol hydrochloride, salbutamol, cimaterol, and ractopamine hydrochloride in animal muscle and liver

2. Sample preparation

Weigh 5 g sample, add 15 mL ethyl acetate and 3 mL 10% sodium carbonate, homogenize at 10,000 rpm for 2 min, centrifuge at 6,000 rpm for 2 min, transfer the supernatant to the centrifuge tube, extract residues using 15 mL ethyl acetate, combine ethyl acetate layers. Add 5 mL 0.1 M hydrochloric acid to the ethyl acetate extract, vortex 1 min, centrifuge 1 min at 6,000 rpm, collect the lower aqueous phase. Repeat the extraction and combine lower aqueous phase, adjust to pH 5.2 with 2.5 mol/L sodium hydroxide.

3. Sample purification

ProElut™ PXC 60 mg / 3 mL (Cat#68203)

Condition: 3 mL MeOH / 3 mL H₂O / 3 mL 30 mM HCl

Load: Add sample

Wash 1: 3 mL deionized water

Wash 2: 3 mL MeOH

Elute: 5 mL MeOH (4% NH₄OH), evaporate to near dry at 50 °C by N₂

4. Derivatization

Add 100 μ L toluene and 100 μ L *bis*-trimethylsilyl trifluoroacetamide (BSTFA), vortex 20 sec, seal, heat for 1 h at 80 °C, add 300 μ L of toluene after cooling as the sample solution.

5. GC-MS method

GC conditions

Column: DM-5MS 30 m x 0.25 mm x 0.25 μ m (Cat#8221)

Inlet Temperature: 220 °C

Injection Mode: Splitless

Injection Volume: 1 μ L

Temperature Program: Heating to 70 °C in 0.6 min, then heating to 200 °C with 25 °C/min in 6 min, finally heating to 280 °C with 25 °C/min in 5 min

Carrier Gas: He > 99.999%, flow rate: 0.9 mL/min

MS conditions

Interface Temperature: 280 °C

Solvent Delay: 8 min

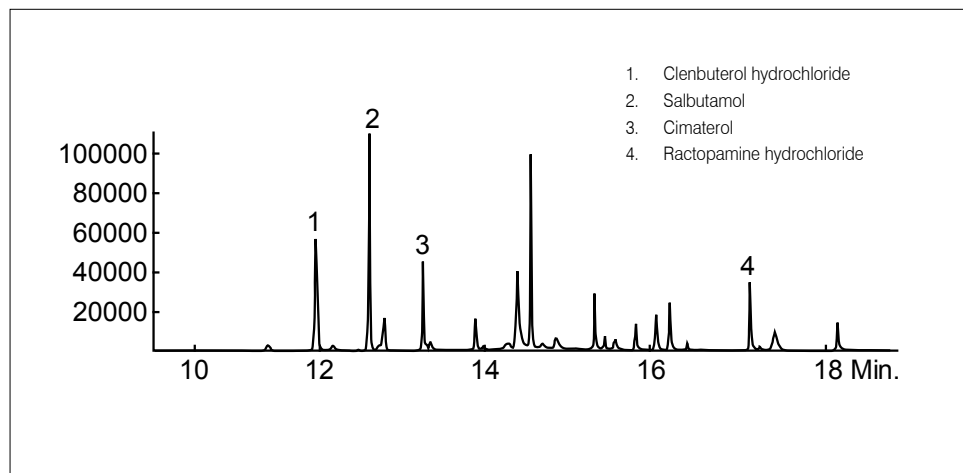
El Temperature: 230 °C

Quadrupole Temperature: 160 °C

Ion Monitoring: Qualitative ion 86, 243, 262, 277, quantitative ion 86

5. Recovery

Compounds	Spike Level ($\mu\text{g}/\text{kg}$)					
	1.0		10.0		100	
	Recovery (%)	RSD (%) (n = 3)	Recovery (%)	RSD (%) (n = 3)	Recovery (%)	RSD (%) (n = 3)
Clenbuterol	75.37	5.93	83.21	5.39	90.05	2.86
Salbutamol	72.40	6.12	84.45	5.72	88.27	4.16
Cimaterol	76.73	4.90	85.95	4.68	91.15	3.86
Ractopamine	70.09	7.85	87.46	3.59	89.53	5.93



The total ion chromatogram (TIC) of pig liver extracts - spiked 4 β -agonist drugs in pig liver (0.1 mg/kg)

Determination of Benzopyrene Originating from Vegetable Oil

1. Scope of application

Used for determination of benzopyrene originating from vegetable oil

2. Sample preparation

Weigh 0.4 g sample, accurate to 0.001 g, dilute with 5 mL *n*-hexane.

3. Sample purification

ProElut™ BaP 22 g / 60 mL (Grade IV activity) (Cat#65351)

Condition: 30 mL *n*-hexane

Load: Add sample

Elute: 50 mL *n*-hexane

Reconstitute: Vacuum evaporation at 30 °C, reconstitute to 1 mL with MeCN:THF (9:1, V / V) solution

4. HPLC method

Column: Inspire™ 5 μm C18, 250 x 4.6 mm (Cat#81006)

Mobile Phase: MeCN:H₂O = 97:3

Flow Rate: 1.0 mL/min

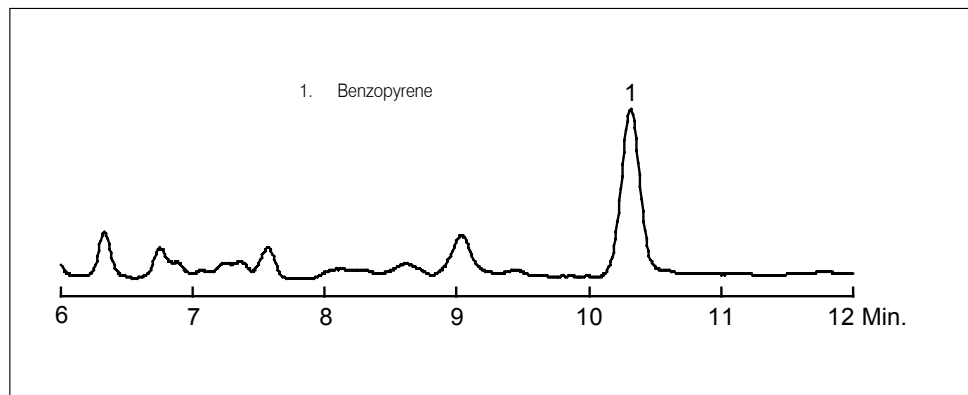
Temperature: 30 °C

Detection: FLD Ex: 384 nm, Em: 406 nm

Injection Volume: 5 μL

5. Recovery

Compounds	Spike Level (mg/kg)	Recovery (%)	RSD (%) (n = 4)
Benzopyrene	0.1	96.8	2.30
Benzopyrene	0.01	98.5	4.50



Chromatogram of vegetable oil extracts - spiked benzopyrene in vegetable oil (0.01 mg/kg)

Determination of Tetracyclines in Animal Tissue

1. Scope of application

Used for determination of oxytetracycline, tetracycline, chlortetracycline and doxycycline in animal tissue

2. Sample preparation

To 5.0 g of homogenized sample, add 20 mL of Mcllvaine buffer*, vortex 2 min, centrifuge at 4000 rpm for 5 min, collect supernatant. Wash lower residue with 20 mL, and then 10 mL Mcllvaine buffer. Repeat wash and combine extracts, and set the volume to 50 mL. Filter extract with fast filter paper, collect filtrate and take 10 mL as the sample solution.

*Mcllvaine buffer: Disodium hydrogen phosphate ($\text{Na}_2\text{HPO}_4 \cdot 12\text{H}_2\text{O}$) 27.6 g, citric acid ($\text{C}_6\text{H}_8\text{O}_7 \cdot \text{H}_2\text{O}$) 12.9 g, EDTA disodium salt 37.2 g, dissolved in water and diluted to 1,000 mL.

3. Sample purification

ProElut™ PLS 60 mg / 3 mL (Cat#68003)

Condition: 3 mL MeOH / 3 mL H_2O

Load*: 10 mL sample

Wash 1: 3 mL H_2O

Wash 2: 3 mL 5 % MeOH in H_2O

Elute: 3 mL MeOH

Reconstitute: Evaporate to near dry, reconstitute to 1 mL with mobile phase

*20 mL reservoir (Cat#4811) and adaptor (Cat#4803) is available for large volume sample

4. HPLC method

Column: Spursil™ 5 μm C18, 150 x 4.6 mm (Cat#82001)

Mobile Phase: A: 0.01 M Oxalic acid in H_2O , B: MeOH:MeCN = 1:1

Flow Rate: 1.0 mL/min

Temperature: 30 °C

Detection: UV 365 nm

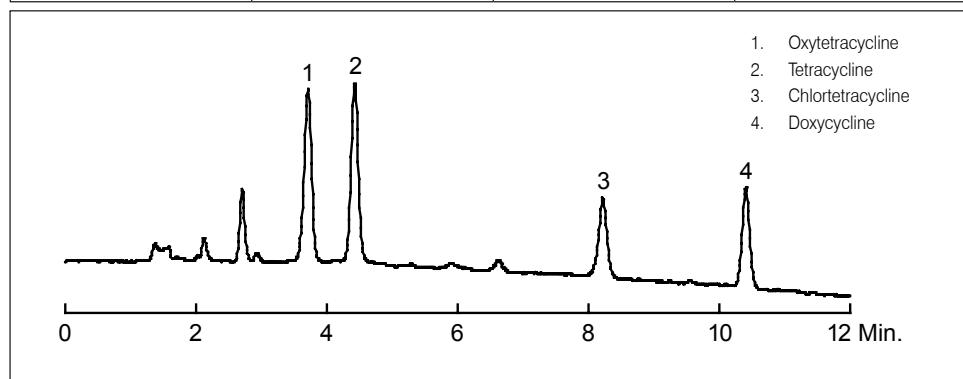
Injection Volume: 20 μL

Gradient:

Time / Min.	0	10	10.5	20
A	70	50	70	70
B	30	50	30	30

5. Recovery

Compounds	Spike Level (mg/kg)	Recovery (%)	RSD (%) (n = 3)
Oxytetracycline	0.2	95.31	2.80
	1.0	90.30	2.00
Tetracycline	0.2	83.17	0.54
	1.0	81.84	2.38
Chlortetracycline	0.2	102.70	2.75
	1.0	90.83	3.21
Doxycycline	0.2	83.16	3.12
	1.0	81.30	1.43



Chromatogram of tetracyclines - spiked tetracyclines in pork tissue (1.0 mg/kg)

Determination of Fungicides in Fruit Juice

1. Scope of application

Used for determination of carbendazim and thiabendazole in fruit juice

2. Sample preparation

2.1 Juice drinks and pure fruit juice

Start with 10 mL sample, adjust to pH 10 - 11 with 0.1 M NaOH, add 15 mL ethyl acetate, shake 1 min, centrifuge 1 min at 4,000 rpm, collect ethyl acetate layer. Repeat 15 mL ethyl acetate extraction, and combine organic phases, vacuum distillation at 30 °C to near dry. Dissolve residue with 0.1 M HCl (6 mL) twice.

2.2 Fruit juice concentrate

Start with 2 mL sample mixed with 8 mL H₂O, adjust to pH 10 - 11 with 0.1 M NaOH, and then follow the above steps.

3. Sample purification

ProElut™ PXC 60 mg / 3 mL (Cat#68203)

Condition: 3 mL MeOH / 3 mL H₂O

Load: Adding sample

Wash: 3 mL H₂O / 3 mL MeOH

Elute: 3 mL MeOH (5 % NH₄OH)

Reconstitute: Evaporate to near dry at 30 °C, reconstitute to 1 mL with mobile phase

4. HPLC method

Column: Inspire™ 5 μm C18, 250 x 4.6 mm (Cat#81006)

Mobile Phase: Phosphate buffer:MeCN = 75:25

Flow Rate: 1.0 mL/min

Temperature: 30 °C

Detection: UV 288 nm

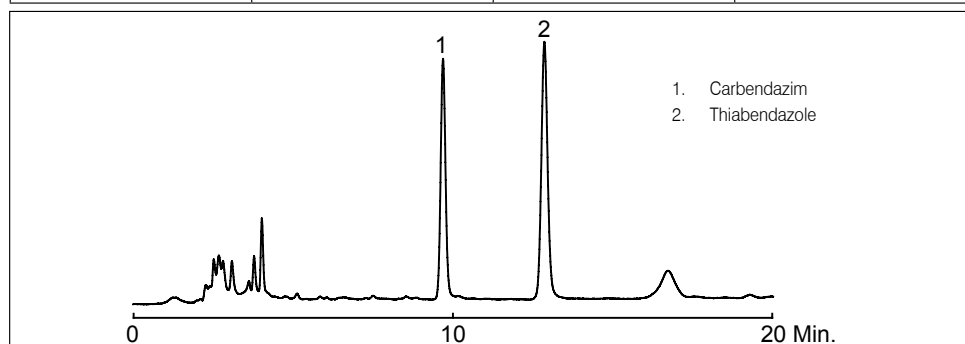
Injection Volume: 20 μL

Phosphate buffer: 1.38 g sodium dihydrogen phosphate, 1.41 g disodium hydrogen phosphate, dissolve in 1,000 mL water

5. Recovery

5.1. Grape juice

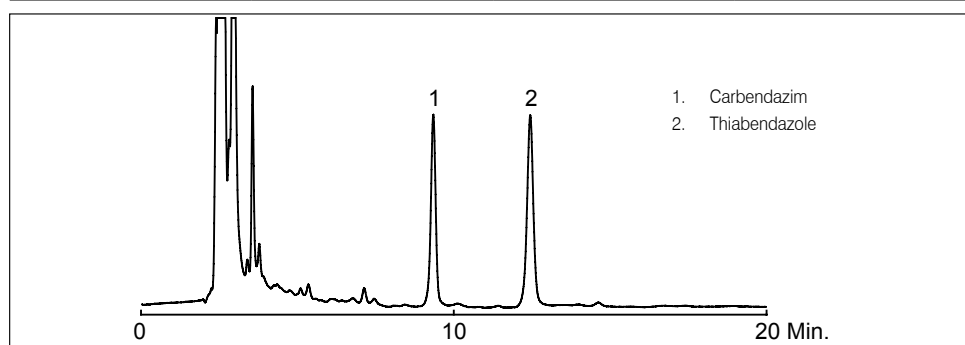
Compounds	Spike Level (mg/L)	Recovery (%)	RSD (%) (n = 3)
Carbendazim	0.1	87.0	8.0
	0.5	99.7	3.5
Thiabendazole	0.1	83.1	7.8
	0.5	102.6	3.8



Chromatography of fungicides - spiked fungicides in grape juice (0.1 mg/L)

5.2. Orange juice

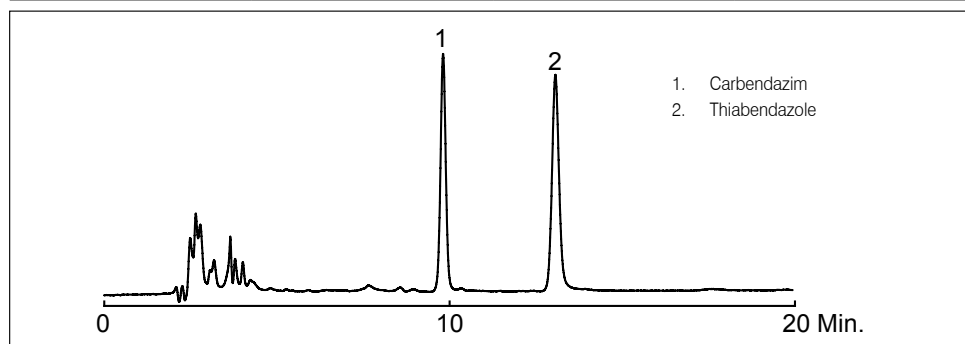
Compounds	Spike Level (mg/L)	Recovery (%)	RSD (%) (n = 3)
Carbendazim	0.1	100.4	2.6
	0.5	94.4	4.5
Thiabendazole	0.1	98.1	3.1
	0.5	98.3	1.9



Chromatography of fungicides - spike fungicides in orange juice (0.1 mg/L)

5.3. Peach juice

Compounds	Spike Level (mg/L)	Recovery (%)	RSD (%) (n = 3)
Carbendazim	0.1	89.9	2.4
	0.5	92.3	5.5
Thiabendazole	0.1	90.0	1.6
	0.5	92.6	2.9



Chromatography of fungicides - spike fungicides in peach juice (0.5 mg/L)

Determination of Tetracyclines in Milk and Dairy Products

1. Scope of application

Used for determination of oxytetracycline, tetracycline, chlortetracycline and doxycycline in milk and dairy products

2. Sample preparation

Dilute milk sample (20 mL) or 2 g solid dairy product with 20 mL H₂O, add 20 mL Mcllvaine buffer*, vortex for 2 min, centrifuge at 4,000 rpm for 10 min, take 20 mL supernatant as the sample solution.

*Mcllvaine buffer: Disodium hydrogen phosphate (Na₂HPO₄•12H₂O) 27.g, citric acid (C₆H₈O₇•H₂O) 12 g, EDTA disodium salt 37 g, dissolved in water and diluted to 1,000 mL.

3. Sample purification

ProElut™ PLS 150 mg / 6 mL (Cat#68004)

Condition: 6 mL MeOH / 6 mL H₂O

Load*: 20 mL sample

Wash 1: 6 mL H₂O

Wash 2: 6 mL 10 % MeOH in H₂O

Elute: 6 mL MeOH

Reconstitute: Evaporate to near dry at 40 °C, reconstitute to 1 mL with mobile phase

*20 mL reservoir (Cat#4811) and adaptor (Cat#4803) is available for large volume sample

4. HPLC method

Column: Spursil™ 5 μm C18, 150 x 4.6 mm (Cat#82001)

Mobile Phase: A: 0.01 M Oxalic acid in H₂O, B: MeOH:MeCN = 1:1

Flow Rate: 1.0 mL/min

Temperature: 30 °C

Detection: UV 365 nm

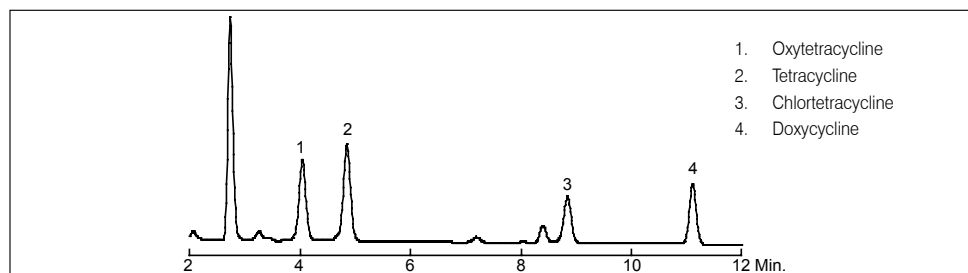
Injection Volume: 20 μL

Gradient:

Time / Min.	0	10	10.5	20
A	70	50	70	70
B	30	50	30	30

5. Recovery

Compounds	Spike Level (mg/kg)	Recovery (%)	RSD (%) (n = 3)
Oxytetracycline	0.1	88.17	4.01
	0.5	83.95	2.35
Tetracycline	0.1	89.46	0.69
	0.5	90.06	3.68
Chlortetracycline	0.1	96.54	2.92
	0.5	100.86	0.69
Doxycycline	0.1	90.48	0.99
	0.5	88.26	0.81



Chromatogram of tetracyclines - spiked tetracyclines in milk (0.1 mg/kg)

Determination of Phenols in Water

1. Scope of application

Used for determination of phenols in natural water, drinking water

2. Sample preparation

100 mL sample, adjust to pH 2 with H₃PO₄

3. Sample purification

ProElut™ PLS 60 mg / 3 mL (Cat#68003)

Condition: 3 mL MeOH:MTBE = 10:90 / 3 mL MeOH / 3 mL H₂O

Load: 100 mL sample, flow rate ≤ 5 mL/min

Wash: 3 mL H₂O

Elute: 3 mL MeOH:MTBE = 10:90

Reconstitute: Evaporate at 40 °C by N₂, reconstitute to 1 mL with MeCN:H₂O (50:50, V / V) solution

4. HPLC method

Column: Inspire™ 5 μm C18, 150 x 4.6 mm (Cat#81001)

Mobile Phase: A: 1% CH₃COOH in H₂O, B: 1% CH₃COOH in MeCN

Flow Rate: 1.0 mL/min

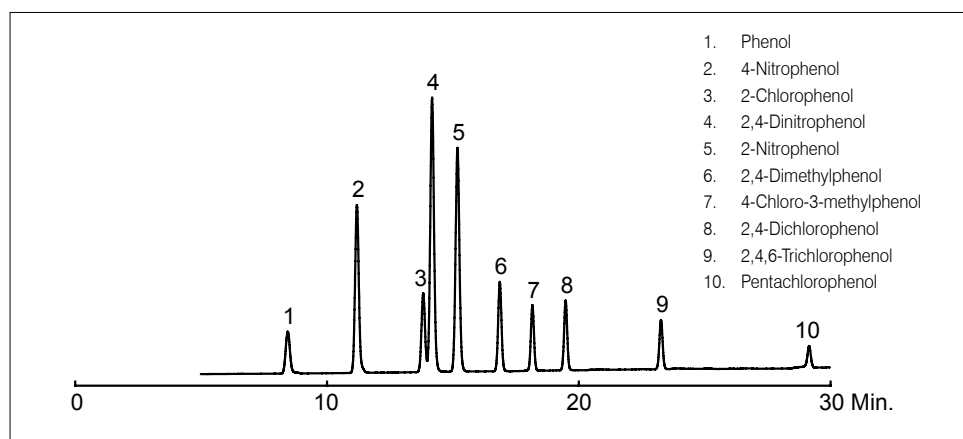
Temperature: Ambient

Detection: UV 280 nm

Injection Volume: 20 μL

Gradient:

Time / Min.	0	25	30	35	37
A	80	30	0	0	80
B	20	70	100	100	20



Determination of Phthalate Esters (PAEs) in Water

1. Scope of application

Used for determination of dimethyl phthalate (DMP), diethyl phthalate (DEP), dipropyl phthalate (DPrP), butyl benzyl phthalate (BBP), dibutyl phthalate (DBP), diamyl phthalate (DPP), dicyclohexyl phthalate (DCHP), di-*n*-hexyl phthalate (DHP), and di-(2-ethylhexyl)phthalate (DEHP) in natural water and drinking water.

2. Sample purification

ProElut™ PLS GLASS 200 mg / 6 mL (Cat#68012G)

Condition: 6 mL methyl *tert*-butyl ether / 6 mL MeOH / 6 mL H₂O

Load: Up to 500 mL sample, flow rate ≤15 mL/min

Wash: 3 mL 5 % MeOH / H₂O

Elute: 3 mL MeOH / 6 mL methyl *tert*-butyl ether

Reconstitute: Evaporate to near dry at 30 °C, reconstitute to 1 mL with acetonitrile

3. HPLC method

Column: Inspire™ 5 μm C18, 250 x 4.6 mm (Cat#81006)

Mobile Phase: A: H₂O, B: MeCN

Flow Rate: 1.0 mL/min

Temperature: 30 °C

Detection: UV 230 nm

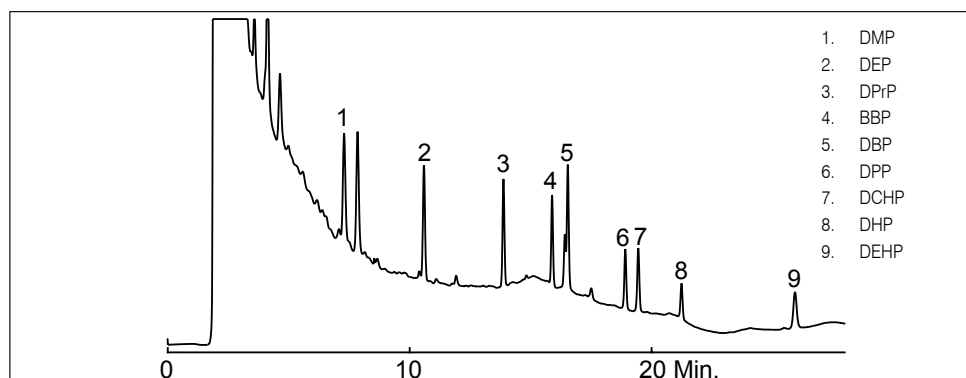
Injection Volume: 20 μL

Gradient:

Time / Min.	0	10	15	23	24	33
A	50	10	0	0	50	50
B	50	90	100	100	50	50

4. Recovery

Compounds	Spike Level (μg/L)	Recovery (%)	RSD (%) (n = 3)
DMP	2	110.3	5.6
	10	90.9	3.8
DEP	2	99.4	2.9
	10	88.9	1.3
DPrP	2	98.7	1.5
	10	89.1	1.0
BBP	2	82.6	1.5
	10	76.3	3.0
DBP	2	98.4	1.6
	10	97.1	2.2
DPP	2	74.7	6.4
	10	68.3	5.6
DCHP	2	82.8	1.7
	10	76.2	5.8
DHP	2	70.4	3.0
	10	69.3	3.8
DEHP	2	74.3	1.9
	10	71.9	2.5



Chromatography of PAEs - spiked PAEs in water (2 μg/L)

Determination of Tetracyclines in Serum

1. Scope of application

Used for determination oxytetracycline, tetracycline and chlortetracycline in human and animal serum

2. Sample preparation

2 mL serum, add 40 μ L H₃PO₄

3. Sample purification

ProElut™ PLS 60 mg / 3 mL (Cat#68003)

Condition: 3 mL MeOH / 3 mL H₂O

Load: 2 mL sample

Wash: 3 mL 5 % MeOH in H₂O

Elute: 3 mL MeOH

Reconstitute: Evaporate to near dry at 30 °C, reconstitute to 1 mL with mobile phase

4. HPLC method

Column: Inspire™ 5 μ m C18, 250 x 4.6 mm (Cat#81006)

Mobile Phase: MeOH:MeCN:10 mM oxalic acid in H₂O = 15:15:70

Flow Rate: 1.0 mL/min

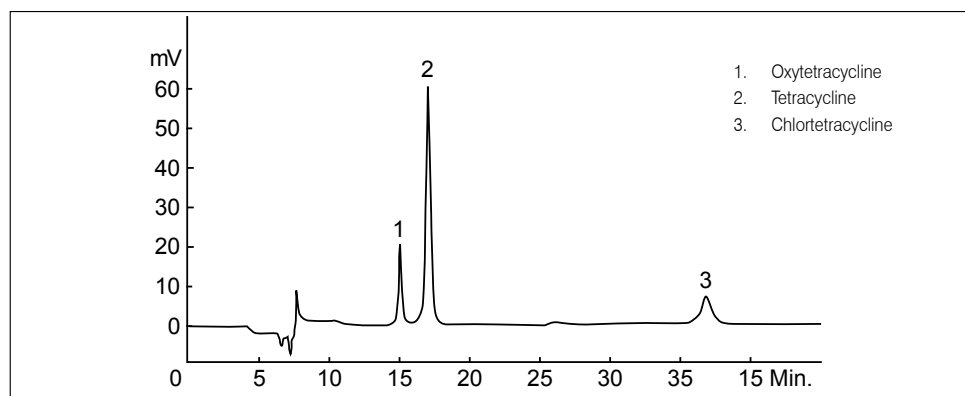
Temperature: 30 °C

Detection: UV 365 nm

Injection Volume: 20 μ L

5. Recovery

Compounds	Spike Level (mg/L)	Recovery (%)	RSD (%) (n = 3)
Oxytetracycline	0.5	92.6	2.1
	2.0	95.8	0.5
Tetracycline	0.5	97.3	2.4
	2.0	95.8	0.8
Chlortetracycline	0.5	102.70	3.1
	2.0	97.3	1.4



Chromatogram of tetracyclines - spiked tetracyclines in serum (0.5 mg/L)

Others

Determination of Migration of Bisphenol A (BPA) from Plastic Baby Bottles

1. Scope of application

Used for determination of migration of bisphenol A (BPA) from plastic baby bottles

2. Sample purification

Wash bottles, dry completely. Add distilled water so that each 8 m² of plastic contact area corresponds to 10 mL of simulant immersion. Sealed with aluminum foil, place in oven at 100 °C for 1 h. Cool to room temperature, then transfer to glass bottles, and seal until detection.

3. Sample purification

ProElut™ PLS GLASS 200 mg / 6 mL (Cat#68012G)

Condition: 6 mL MeOH / 6 mL H₂O

Load: Adding sample

Wash: 6 mL 5 % MeOH in H₂O

Elute: 6 mL MeOH

Reconstitute: Evaporate to near dry at 40 °C, reconstitute to 1 mL with mobile phase

4. HPLC method

Column: Inspire™ 5 μm C18, 250 x 4.6 mm (Cat#81006)

Mobile Phase: MeCN:2% CH₃COOH in H₂O = 40:60

Flow Rate: 1.0 mL/min

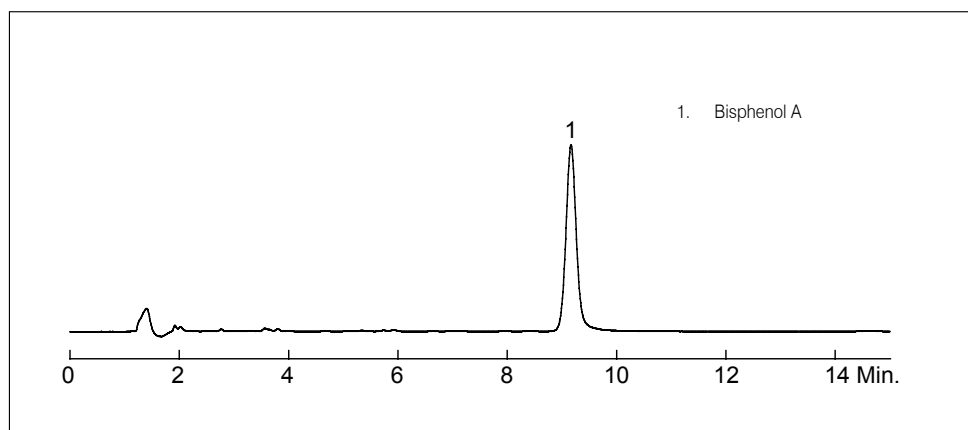
Temperature: 30 °C

Detection: FLD Ex: 227 nm, Em: 313 nm

Injection Volume: 20 μL

5. Recovery

Compounds	Spike Level (μg/L)	Recovery (%)	RSD (%) (n = 3)
Bisphenol A	0.4	94.54	5.1
	1.6	97.30	3.7



Chromatography of bisphenol A - immersion concentration (0.4 μg/L)

HPLC

A

Acebutolol	10, 17, 21, 134
Acenaphthene	6
Acesulfame K	147, 148
Acetaldehyde-DNPH	143
Acetaminophen	7, 131
Acetanilide	7, 34
Acetic acid	28, 144, 145
Acetone-DNPH	143
Acetophenone	5, 15, 32
Acetylacetone	8
Acetylsalicylic acid	7, 12, 14, 19, 34, 131, 141
Acid orange II	143
Acid red 2G	143
Acid yellow 36	143
Acrolein-DNPH	143
Adenine	34
ADP	44
Alicyclic acid	14
Aloe emodin	54
Alprazolam	27, 44, 139
Alprenolol	10, 21, 38, 134
Amaranth	143
<i>p</i> -Aminobenzoic acid	12, 14, 19, 131, 141, 146, 147
Amtripyline	6, 11, 18, 24, 25, 37, 45, 50, 139, 140
Amoxicillin	138
AMP	44
Ampicillin	138
Amylbenzene	5
Ancy red	143
Aniline	8, 15, 16, 23
<i>L</i> -Ascorbic acid	7, 12, 19, 36, 40, 131, 140, 141
Aspartame	23, 147, 148
ATP	44
Auramine	143
Azorubine	143

B

Basic orange	143
BBP	146
Benzaldehyde-DNPH	143
Benzene	8, 16, 22, 33
Benzoic acid	14, 131, 141, 142
Benzoyl peroxide	142
Berberine	131
Betamethasone	16
BHA	149
BHT	149
Bibenzyl	39
Bisoprolol	38
Bovine insulin	52
Brilliant black	143
Brilliant blue	143
Brompheniramine	24, 133
Butylbenzene	5
Butyl paraben	6, 9, 39, 145, 146
Butyraldehyde-DNPH	143

C

Caffeic acid	29, 138
Caffeine	5
Capsaicin	56
Carbadox	13, 19, 26, 132
Carmine	143
Catechin	29, 138
Catechol	49, 143
Cefaclor	26, 41, 42, 43, 135, 136, 137
Cefadroxil	26, 41, 42, 43, 135, 136, 137
Cefazolin	26, 41, 42, 43, 135, 136, 137
Cefoxitin	26, 41, 43, 135, 136, 137
Cefradine	26, 41, 43, 135, 136, 137
Ceftazidime	26, 41, 42, 43, 135, 136, 137
Cefuroxime	26, 41, 43, 136
Cephalexin	26, 41, 42, 43, 135, 136, 137
Chlorbenzuron	142
Chlorfluazuron	142
<i>p</i> -Chlorobenzoic acid	12, 147
4-Chloro-3-methylphenol	46, 146, 150
2-Chlorophenol	46, 146, 150
4-Chlorophenol	46, 146
Chlorpheniramine	24, 54, 133
Chrysophanol	54
Cimetidine	11, 131, 132

Ciprofloxacin	139
Citric acid	28, 144, 145
Citrulline	36
Clomipramine	11, 18, 24, 44, 50, 139, 140
Clonazepam	27, 44, 139
Cloxacillin	138
CMP	44
Codeine	6
Cortisone	23, 35, 150
Cortisone 21-acetate	16
<i>p</i> -Coumaric acid	29, 138
Crotonaldehyde-DNPH	143
CTP	44
Cytochrome C	52, 149
Cytosine	34

D

2,4-D	29, 143
Dalapon	29, 143
DBP	146
DEHP	146
Desipramine	11, 24, 25, 37, 140
Dexamethasone	14, 35, 150
Dextromethorphan	34
Dextromethorphan hydrobromide	54
Diazepam	27, 44, 139
2,4-Dichlorophenol	46, 146, 150
Diclofenac	35, 133
Dicloxacillin	138
DIDP	146
Difloxacin	139
Diflubenzuron	142
Dihydrocapsaicin	56
<i>N,N</i> -Dimethylaniline	15, 23, 39
2,4-Dimethylphenol	150
2,5-Dimethylresorcinol	49, 143
1,3-Dimethyluric acid	40, 142
1,7-Dimethylxanthine	40, 142
2,4-Dinitrophenol	150
DINP	146
Dioctyl phthalate	23
Diphenhydramine	6, 24, 34, 59, 133
Dipropyl phthalate	6
Diuron	144
DNOP	146
DNPH	143
Dopamine	9, 48, 135
Doxepin	11, 18, 24, 25, 44, 50, 139, 140
Doxylamine	7, 24, 34, 133

E

Emodin	54
Enrofloxacin	139
Epinephrine	9, 48, 135
Erythrosine	143
Estazolam	139
Ethylbenzene	15, 23, 39, 45
Ethyl benzoate	15, 23, 57
Ethyl paraben	9, 39, 145, 146

F

Famotidine	11, 131, 132
Fenoprofen	13, 35, 133
Fenuron	144
Flufenoxuron	142
Flumequine	139
Flurbiprofen	13, 35, 133
Formaldehyde-DNPH	143
Fumaric acid	28, 144, 146
Furazolidone	13, 19, 26, 132

G

Gallic acid	29, 138
Gatifloxacin	139
GDP	44
GMP	44
GTP	44

H

Hexaflumuron	142
Hexaldehyde-DNPH	143
Homovanillic acid	12, 18, 19, 59, 131, 141, 146, 147
Human insulin	52
Hydrastine	131
Hydrocortisone 21-acetate	14, 35, 150
11- α -Hydroprogesterone	14, 16, 150
<i>p</i> -Hydroxybenzoic acid	34
<i>o</i> -Hydroxyhippuric acid	59

11- α -Hydroxyprogesterone	14, 16, 150
-----------------------------------	-------------

I

Ibuprofen	13, 35, 133
Imipramine	24, 25, 37, 50
Indigotin	143
Insulin	52, 149
Ionox 100	149
Isovaleraldehyde-DNPH	143

K, L

Ketoprofen	13, 35, 133
Labeltolol	10, 17, 21, 38, 60, 134
Lactic acid	28, 144, 145
Lauryl gallate	149
Linoleic acid	148
Linolenic acid	148
Linuron	144
Lissamine green B	143
Lle-Val-Pro-Phe-Lyl-Pro-Leu-Thr-Amide	52
Lysozymes	52, 149

M

Maleic acid	24, 34, 133
Malic acid	28, 144, 145
Marbofloxacin	139
Melamine	144
Methionine	36
Methoxyfenozide	142
Methyl benzoate	5, 15, 32, 57
3-Methylcatechol	49, 143
4-Methylcatechol	49, 143
Methyl paraben	9, 39, 145, 146
2-Methylresorcinol	49, 143
1-Methyluric acid	40, 142
3-Methylxanthine	40, 142
7-Methylxanthine	40, 142
Metoprolol	10, 17, 21, 38, 60, 134
Monuron	144
Myricetin	29, 138

N

Nadolol	10, 17, 21, 38, 60, 134
Nalidixic acid	59, 139
Naphazoline hydrochloride	54
Naphthalene	5, 6, 8, 15, 32
NDGA	149
<i>N</i> -Formyl-Nle-Leu-Phe-Nle-Tyr-Lys	52
Nicotinamide	7, 36, 40, 140
<i>p</i> -Nitrobenzoic acid	12, 18, 146, 147
2-Nitrobenzyl alcohol	56
4-Nitrobenzyl alcohol	56
4-Nitrocatechol	49, 143
1-Nitronaphthalene	8
2-Nitrophenol	46, 146, 150
4-Nitrophenol	46, 146, 150
Nitrozepam	27, 139
Nizatidine	11, 131, 132
Norclozapine	59, 139, 140
Nordoxepin	24, 25, 27, 50
Norepinephrine	9, 48, 135
Norfloroxacin	139
Nortriptyline	6, 11, 18, 24, 25, 27, 37, 50, 139, 140

O

Octyl gallate	149
Ofloxacin	139
Oleic acid	148
Orotic acid	36, 40
Oxacillin	138
Oxalic acid	28, 144, 145
Oxazepam	27, 139
Oxolinic acid	13, 19, 26, 132, 139

P, Q

Pazufloxacin	139
Penicillin G	138
Pentachlorophenol	150
Phenacetin	13, 35, 133
Pheniramine	24, 133
Phenol	5, 8, 15, 16, 22, 23, 33, 46, 47, 146, 150
Physcion	54
Pindolol	10, 17, 21, 38, 60, 134
Piperacilin	138
Porcine insulin	52
Prednisolone	14, 16, 35, 150
Prednisone	14, 16, 35, 150
Procainamide	34
Propranolol	10, 17, 21, 38, 60, 134

Compound Index for HPLC / GC

Propylbenzene39
 Propyl gallate149
 Propyl paraben9, 39, 145, 146
 Protriptyline18, 50, 139
 Pseudoephedrine hydrochloride54
 Pyridine6, 22, 33, 47
 Pyridoxal7, 36, 40, 140
 Pyridoxamine7, 36, 40, 140
 Pyridoxol36, 40, 140
 Quercitrin29, 138
 Quinine6, 131
 Quinizarin45

R
 Ranitidine11, 131, 132
 Reserpine23
 Resorcinol49, 143
 Rheoin54
 Rhiphenylene5

S
 Salicylic acid7, 12, 18, 19, 59, 141, 147
 Sarafloxacin139
 Sodium saccharin147, 148
 Sorbic acid12, 18, 19, 59, 131, 141, 142, 146, 147
 Sparfloxacin139
trans-Stilbene39
 Succinic acid28, 144, 145
 Sulfadimethoxine13, 19, 132
 Sulfamerazine13, 19, 26, 132
 Sulfamethazine19, 132
 Sulfamethoxazole13, 19, 26, 132
 Sulfamethoxypropyridazine13, 19, 26, 132
 Sulfanilamide13, 19, 26, 132
 Sulfapyridine26, 132
 Sulfadoxine13, 132
 Sulfisoxazole13, 19, 26, 132
 Sunset yellow143

T
 2,4,5-T29, 143
 Tartaric acid28, 144, 145
 Tartrazine143
 TBHQ149
 Tebufenozide142
 Teflubenzuron142
o-Terphenyl5
 THBP149
 Theobromine40, 131, 142
 Theophylline40, 142
 Thiamine36, 40
 Thiamphenicol26, 132
 Thiourea15, 23, 34
 α -Tocopherol36
 γ -Tocopherol36
 δ -Tocopherol36
 Tolmetin13, 35, 133
m-Tolualdehyde-DNPH143
o-Tolualdehyde-DNPH143
p-Tolualdehyde-DNPH143
o-Toluamide34
 Toluene5, 8, 15, 16, 23, 32, 45, 56
p-Toluic acid18, 146, 147
o,m,p-Toluidine15, 23
 Triazolam27, 44, 139
 2,4,6-Trichlorophenol46, 146, 150
 Triflumuron142
 Trimipramine11, 18, 24, 25, 27, 37, 44, 50, 139, 140
 Tyrosine36

U
 Uracil5, 6, 8, 15, 16, 22, 32, 33, 45
 Uric acid40, 142
 Uridine34

V, X
 Valeraldehyde-DNPH143
 Valine36
 Vanillic acid29, 138
 Verapamil59
 Xanthine40, 142

GC

A

Acenaphthene69, 99, 156, 157, 159
 Acenaphthene-d10158, 159
 Acenaphthylene69, 99, 156, 157, 159
 Acetal204
 Acetaldehyde188, 189, 192, 203, 204
 Acetamide193, 195, 197
 Acetic acid192, 200, 204
 Acetochlor158
 Acetoin204
 Acetone187, 192, 199, 203, 204, 211, 212
 Acetonitrile192, 211, 212
 Acetophenone159, 174, 206
 Acetopromazine208
 Acetylene82, 169, 170, 171, 172, 173
n-Acetyl galactose amine207
n-Acetyl glucose amine207
 Acetyl tributyl citrate193, 195, 197
 Acrylonitrile191, 199
 Adiponitrile184
 Air168, 189
 Aldrin162, 164
 Alkylthiophenes176
 Allyl alcohol193, 195, 197
 Allylmercaptan176
 Alprazolam208
 Ametryne165
 6-Aminocapronitrile184
 2-Amino-4,6-dinitrotoluene167
 4-Amino-2,6-dinitrotoluene167
 Aminoethylethanolamine184
 Aminoethylpiperazine184
 Aminomethylcyclopentylamine184
 2-Amino-4-nitrotoluene167
 2-Amino-6-nitrotoluene167
 Amitriptyline208
 Amobarbital209
 Amphetamine209
 Amyl alcohol199
tert-Amyl ether175
 5 α -Androstan-17 β -ol-3-one210
 5-Androstene-3 β ,17 β -diol210
 Aniline159, 185
 Anisole192
 Anisoxide155
 Anthracene66, 69, 156, 157, 159
 Aprobital209
 Arabinitol207
 Aramite159
 Argon84, 168, 169
 Aspon162
 Atraton165
 Atrazine163, 165
 Azinphos-ethyl162
 Azinphos-methyl162
 Azobenzene158, 159

B
 Balan163
 Barbitol209
 BBP160
 BEEP160
 Benzaldehyde174, 188, 189, 193, 195, 197, 204, 206
 Benzene87, 97, 98, 154, 155, 166, 174, 175,179, 180, 181, 192, 193, 195, 197, 211, 212
 Benzeneacetalddehyde206
 Benzenepropanoic acid ethyl ester204
 Benzidine159, 161
 Benzo[a]anthracene69, 99, 156, 157, 159
 Benzo[a]pyrene69, 99, 156, 157, 159
 Benzo[b]fluoranthene69, 99, 156, 157, 159
 Benzo[ghi]perylene69, 99, 156, 157, 159
 Benzoic acid159, 206
 Benzo[j]fluoranthene99, 156
 Benzo[k]fluoranthene69, 99, 156, 157, 159
 Benzothioephene176
 Benzotrifluoride97, 166
 1,2-Benzophenanthrene69, 156, 157
 Benzphetamine208, 209
 Benzyl alcohol159, 174, 193, 195, 197
 Benzyl butyl phthalate159
 Benzyl ether190, 193, 195, 197

Benzyl ethyl phthalate167
 Benzyl salicylate206
 α -Bergamotene205
trans- α -Bergamotene203
 BHA203, 206
 α -BHC162, 164
 β -BHC162, 164
 γ -BHC162, 164
 δ -BHC162, 164
 BHT206
 Bibenzyl182
 β -Bisabolene203
 BMPP160
 Bolasterone210
 Bolstar162
 Borneol205
 β -Bourbonene205
 Brassicasterol207
 Bromacil163
 Bromazepam208
 Bromobenzene97, 155, 166
 2-Bromobutane193, 195, 197
 Bromochloroacetone166
 Bromochloromethane166
 Bromodichloromethane97, 155, 166
 4-Bromofluorobenzene97, 166
 Bromoform97, 155, 166
 Bromomethane97, 154, 155, 166
 4-Bromophenyl phenyl ether159
 Brompheniramine210
 Bupivacaine208
 1,3-Butadiene82, 170, 171, 172, 173, 191
 Butalbital209
 1,4-Butanediol186, 188, 193, 195, 197
L-2,3-Butanediol204
meso-2,3-Butanediol204
iso-Butane179
n-Butane83, 87, 170, 171, 172, 173, 179
 Butanethiol176
n-Butanoic acid204
 1-Butanol (*n*-Butanol)88, 174, 175, 186,187, 192, 204, 206, 211
 2-Butanol (*sec*-Butanol)175, 186, 192, 212
tert-Butanol88, 174, 175, 186, 212
 2-Butanone192, 204
 2-Buten-1-ol193, 195, 197
 3-Buten-2-ol186
 Butenal188
 2-Butenal189
 Butene191
 1-Butene82, 83, 170, 171, 172, 173
cis-2-Butene82, 170, 171, 172, 173
trans-2-Butene82, 83, 170, 171, 172, 173
 Butoxyethanol193, 195, 197
 Butyl acetate98, 154, 191, 192, 193, 195, 197
n-Butyl acetate199
n-Butyl acrylate199
 Butyl alcohol191
n-Butyl alcohol187, 199
sec-Butyl alcohol204
tert-Butyl alcohol175
sec-Butylamine95, 183
tert-Butylamine95, 183
 Butylbenzene180, 182
n-Butylbenzene155
sec-Butylbenzene155
tert-Butylbenzene155, 182
 Butyl butanoate193, 195, 197
 Butylbutyrate191
 Butyl carbitol187
 Butyl cellosolve187
 1,3-Butylene glycol187
 1,4-Butylene glycol187
 Butyl ether190, 193, 195, 197, 206
n-Butyl ether191
 Butyl hexanoate204
n-Butyl methacrylate191
sec-Butyl methyl ether175
di-n-Butylphthalate159
 Butyl sulfide176
 Butyraldehyde188, 190
n-Butyric acid200
 Butyrolactone189

C		
C3 oxide	.....	174
C4:0 (butyric acid)	.....	200
C4s	.....	175
C5	.....	90, 178
C6	.....	90, 178
C6:0 (caproic acid)	.....	200
C6:0 (methyl caproate)	.....	201
C7	.....	90, 178, 179
C8	.....	90, 178, 179
C8:0 (caprylic acid)	.....	200
C8:0 (methyl caprylate)	.....	201
C9	.....	90, 178, 179
C9:0 (methyl nonanoate)	.....	201
C10	.....	90, 178, 179
C10:0 (capric acid)	.....	200
C10:0 (methyl caprate)	.....	201
C11	.....	90, 178, 179
C12	.....	90, 178, 179
C12:0 (lauric acid)	.....	200
C12:0 (methyl laurate)	.....	201
C13	.....	179
C14	.....	90, 178, 179
C14:0	.....	100, 201, 202
C14:0 (methyl myristate)	.....	201
C14:0 (myristic acid)	.....	200
C15	.....	179
C15:0	.....	100, 202
C16	.....	90, 178, 179
C16:0	.....	100, 201, 202
C16:0 (methyl palmitate)	.....	201
C16:0 (palmitic acid)	.....	200
C16:1	.....	100, 202
C16:1 (methyl palmitoleate)	.....	201
C16:1n7	.....	201
C16:2	.....	100, 202
C16:4	.....	100, 202
C17	.....	179
C17:0	.....	100, 202
C17:1	.....	100, 202
C18	.....	90, 178, 179
C18:0	.....	100, 201, 202
C18:0 (methyl stearate)	.....	80, 200, 201
C18:0 (stearic acid)	.....	200
C18:1 (methyl elaidate (trans-9))	.....	80, 200
C18:1 (methyl oleate)	.....	201
C18:1 (methyl oleate (cis-9))	.....	80, 200
C18:1 (methyl petroselaidate (trans-6))	.....	80, 200
C18:1 (methyl petroselinolate (cis-6))	.....	80, 200
C18:1 (methyl transvaccenate (trans-11))	.....	80, 200
C18:1 (methyl vaccenate (cis-11))	.....	80, 200
C18:1n7	.....	201
C18:1n9	.....	201, 202
C18:1 (oleate)	.....	100, 202
C18:1 (oleic acid)	.....	200
C18:1 (vaccenate)	.....	100, 202
C18:2 (linoleic acid)	.....	200
C18:2 (methyl linoleate)	.....	201
C18:2 (methyl linoleate (cis-9,12))	.....	80, 200
C18:2n6	.....	201, 202
C18:2n6cis	.....	100, 202
C18:3 (linolenic acid)	.....	200
C18:3 (methyl linolenate)	.....	201
C18:3n3	.....	100, 201, 202
C18:3n6	.....	201, 202
C18:4n3	.....	100, 201, 202
C18:4n6	.....	100, 202
C19	.....	179
C20	.....	90, 178, 179
C20:0	.....	100, 202
C20:0 (arachidic acid)	.....	200
C20:1n7	.....	100, 202
C20:1n9	.....	100, 201, 202
C20:2n6	.....	201
C20:3n6	.....	201
C20:4n3	.....	100, 202
C20:4n6	.....	100, 201, 202
C20:5n3	.....	100, 201, 202
C21:5n3	.....	100, 202
C22	.....	179
C22:0 (behenic acid)	.....	200
C22:1n7	.....	100, 202
C22:4n6	.....	201
C22:5n3	.....	100, 201, 202
C22:5n6	.....	100, 202
C22:6n3	.....	100, 201, 202
C23	.....	179
C23:0 (IS)	.....	100, 202
C24	.....	90, 178, 179
C24:1	.....	100, 202
C24:1n9	.....	201
C25	.....	179
C26	.....	179
C28	.....	90, 178, 179
C30	.....	179
C32	.....	90, 178, 179
C34	.....	179
C36	.....	90, 178, 179
C38	.....	179
C40	.....	90, 178, 179
C42	.....	179
C44	.....	90, 178
δ -Cadenene	.....	205
Caffeine	.....	208, 209
Campesterol	.....	207
Camphene	.....	203
Caproic acid	.....	200
Capryl alcohol	.....	204
Carbamazepine	.....	209
Carbofenthion	.....	162
Carbon dioxide	.....	168
Carbon disulfide	.....	176, 199
Carbon monoxide	.....	168, 169
Carbon tetrachloride	.....	154, 166, 192, 211
Carbonyl sulfide	.....	176
Carisoprodal	.....	209
d / l Carveol	.....	203
Carvone	.....	203
β -Caryophyllene	.....	203, 205
Cathinone	.....	209
Cellosolve acetate	.....	199
Chloral hydrate	.....	166
Chlorbenzilate	.....	159
α -Chlordane	.....	162, 164
γ -Chlordane	.....	162, 164
Chlorfenvinphos	.....	162
Chlorneb	.....	162
4-Chloroaniline	.....	159
Chlorobenzene	.....	97, 154, 155, 166, 192, 211
Chlorobenzilate	.....	162
Chlorobromomethane	.....	97, 155
Chlorodibromomethane	.....	97
Chlorodifluoromethane (CFC-22)	.....	86, 170
Chloroethane	.....	97, 154, 155, 166, 192
bis(2-Chloroethoxy)methane	.....	159
bis(2-Chloroethyl)ether	.....	159
Chloroform	.....	97, 154, 155, 166, 192, 211, 212
1-Chlorohexane	.....	97, 166
bis(2-Chloroisopropyl)ether	.....	159
Chloromethane	.....	154, 155, 192
4-Chloro-3-methylphenol	.....	158, 159, 161
2-Chloronaphthalene	.....	159, 160
Chloropentafluoroethane (CFC-115)	.....	86, 170
1-Chloropentane	.....	193, 195, 197
2-Chlorophenol	.....	93, 158, 159, 161, 185
2-Chlorophenol-d4	.....	159
2-Chlorophenol-3,4,5,6-d4	.....	158
4-Chlorophenyl phenyl ether	.....	159
Chloropicrin	.....	166
2-Chloropropane	.....	192
3-Chloropropene	.....	154
4-Chlorotestosterone-17-acetate	.....	210
Chlorothalnil	.....	162
m-Chlorotoluene	.....	97, 166
o-Chlorotoluene	.....	97, 155, 166, 193, 195, 197
p-Chlorotoluene	.....	97, 155, 166
Chlorpheniramine	.....	210
Chlorpromazine	.....	208
Chlorpyrifos	.....	162
Chlorpyrifos methyl	.....	162
5- α -Cholestane	.....	207
Cholesterol	.....	207
Chrysene	.....	99, 156, 158, 159
Chrysene-d12	.....	159
1,8-Cineole	.....	203, 205
Cinnamic aldehyde	.....	206
Cinnamyl acetate	.....	206
Cinnamyl alcohol	.....	206
Citronellal	.....	203, 205
β -Citronellol	.....	205
Clonazepam	.....	208
Codeine	.....	208, 210
Coprostanone	.....	207
Coprosterol	.....	207
Cotinine	.....	208
Coumaphos	.....	162
o-Cresol	.....	182, 193, 195, 197
p-Cresol	.....	182
tri-o-Cresyl phosphate	.....	162
Crotoxyphos	.....	162
Cyanazine	.....	158
Cyclohexane	.....	184, 211, 212
Cyclohexanol	.....	188
Cyclohexanone	.....	199
Cyclohexyl phthalate	.....	167
Cyclopentanol	.....	193, 195, 197
Cyclopentanone	.....	193, 195, 197
Cyclopropane	.....	171, 172, 173
p-Cymene	.....	182, 203, 205
D		
Dalapon	.....	165
Dalapon methyl ester	.....	165
DBEP	.....	160
2,4-DB methyl ester	.....	165
DBOB (IS)	.....	165
DBP	.....	160
DCAA (SS)	.....	165
DCB	.....	162
DCHP	.....	160
DCPA	.....	162
4,4'-DDD	.....	162, 164
4,4'-DDE	.....	164
4,4'-DDT	.....	162, 164
Decachlorobiphenyl	.....	164
Decahydronaphthalene	.....	193, 195, 197
cis-Decahydronaphthalene	.....	182
trans-Decahydronaphthalene	.....	182
Decanal	.....	188, 189, 193, 195, 197, 203, 206
Decane	.....	186
n-Decane	.....	87, 179
Decanoic acid	.....	204
1-Decanol (n-Decyl alcohol)	.....	185, 186, 193, 195, 197
2-Decanol	.....	193, 195, 197
3-Decanol	.....	204
n-Decyl chloride	.....	185
n-Decyl-N,N-dimethylamine	.....	185
DEHP	.....	160
1-Dehydro-17 α -methyltestosterone	.....	210
1-Dehydrotestosterone	.....	210
1-Dehydrotestosterone benzoate	.....	210
1-Dehydrotestosterone undecylenate	.....	210
Demeton-O	.....	162
Demeton-S	.....	162
Deoxyglucitol	.....	207
Deoxyribitol	.....	207
DEP	.....	160
Dextromethorphan	.....	208, 210
Diallyl disulfide	.....	176
Diallylsulfide	.....	176
1,4-Diaminobutane	.....	184
1,2-Diaminocyclohexane	.....	184
1,5-Diamino-2-methylpentane	.....	184
2,6-Diamino-4-nitrotoluene	.....	167
2,3-Diaminotoluene	.....	167
2,4-Diaminotoluene	.....	167
2,6-Diaminotoluene	.....	167
Diazepam	.....	208
Diazinon	.....	158, 162
Dibenzo[a,h]acridine	.....	99, 156
Dibenzo[a,i]acridine	.....	99, 156
Dibenzo[a,h]anthracene	.....	69, 99, 156, 157, 159
7H-Dibenzo[c,g]carbazole	.....	99, 156
Dibenzo[a,e]pyrene	.....	99, 156
Dibenzo[a,h]pyrene	.....	156
Dibenzo[a,i]pyrene	.....	99, 156
Dibenzofuran	.....	159
Dibenzyl	.....	193, 195, 197
DIBP	.....	160
Dibromoacetonitrile	.....	166

Compound Index for GC

Dibromochloromethane.....	155, 166	Dimethylbenzothiofenenes.....	176	Ethyl acrylate.....	190
1,2-Dibromo-3-chloropropane.....	97, 155, 166	Dimethylchlorosilane.....	191	Ethylamine.....	95, 183
1,2-Dibromoethane.....	97, 154, 155, 166	Dimethyldichlorosilane.....	191	N-Ethylamphetamine.....	209
Dibromomethane.....	97, 155, 166	Dimethylether.....	175	Ethyl amyl ketone.....	193, 195, 197
Dibromooctafluorobiphenyl methyl ester.....	165	Dimethylethylamine.....	183	Ethylbenzene.....	87, 97, 98, 154, 155, 166, 174, 179,
Dibutyl phthalate.....	167	Dimethyl formamide.....	192, 193, 195, 197, 212	.....	180, 181, 182, 191, 192, 206, 211
Dibutyltin.....	165, 167	2,4-Dimethylphenol.....	158, 161	2-Ethyl-1-butanol.....	193, 195, 197
Dicamba.....	165	2,4-Dimethylphenol-3,5,6-d3.....	158	Ethyl tert-butyl ether.....	175
Dicamba methyl ester.....	165	Dimethyl phthalate.....	159, 167	Ethyl butyrate.....	203, 204, 206
Dichloroacetoneitrile.....	166	Dimethyl sulfoxide.....	192	Ethyl caprate.....	204
1,2-Dichlorobenzene.....	97, 154, 155, 159, 160, 166	1,3-Dinitrobenzene.....	159, 167	Ethyl caproate.....	204
1,3-Dichlorobenzene.....	97, 154, 155, 159, 160, 166	1,4-Dinitrobenzene.....	167	Ethyl chloroacetate.....	193, 195, 197
1,4-Dichlorobenzene.....	97, 154, 155, 159, 160, 166	2,2'-Dinitrobiphenyl.....	167	Ethyl decanoate.....	204
1,2-Dichlorobenzene-d4.....	159	4,6-Dinitro-2-methylphenol.....	159	Ethylene.....	82, 169, 170, 171, 172, 173
1,4-Dichlorobenzene-d4.....	159	1,3-Dinitronaphthalene.....	167	Ethylene diamine.....	184
3,3'-Dichlorobenzidine.....	159, 161	2,4-Dinitrophenol.....	158, 159, 161	Ethylene glycol.....	186, 187, 188, 192, 193, 195, 197
1,4-Dichlorobutane.....	193, 195, 197	2,3-Dinitrotoluene.....	167	Ethylene oxide.....	192, 211
Dichlorodifluoromethane.....	154, 155	2,4-Dinitrotoluene.....	159, 167	Ethyl formate.....	192, 204
Dichlorodifluoromethane (CFC-12).....	86, 170	2,6-Dinitrotoluene.....	159, 167	Ethyl heptanoate.....	204
1,1-Dichloroethane.....	97, 154, 155, 166, 192, 211	3,4-Dinitrotoluene.....	167	2-Ethyl-1-hexanol.....	193, 195, 197
1,2-Dichloroethane.....	97, 154, 155, 166, 192, 211	Dinoseb.....	159, 165	2-Ethylhexyl phthalate.....	167
cis-1,2-Dichloroethene.....	154, 192, 211	Dinoseb methyl ester.....	165	bis(2-Ethylhexyl)phthalate.....	159
trans-1,2-Dichloroethene.....	192	Diocetyl phthalate.....	167	Ethyl isobutyrate.....	204
1,1-Dichloroethylene.....	97, 166	1,4-Dioxane.....	190, 192, 211, 212	Ethyl isovalerate.....	204
cis-1,2-Dichloroethylene.....	97, 155, 166	Dioxathion.....	162	Ethyl lactate.....	204
trans-1,2-Dichloroethylene.....	97, 155, 166	1,3-Dioxolane.....	190	Ethyl linoleate.....	204
Dichlorofenthion.....	162	DIPE.....	175	Ethyl methanesulfonate.....	159
Dichloromethane.....	97, 166, 211	Dipentene.....	193, 195, 197	1-Ethyl-2-methylbenzene.....	181
2,4-Dichlorophenol.....	158, 159, 161	Dipentyl phthalate.....	167	Ethyl myristate.....	204
2,6-Dichlorophenol.....	159	Diphenhydramine.....	208, 210	Ethyl nonanoate.....	204
2,4-Dichlorophenylacetic acid methyl ester.....	165	Diphenylamine.....	159	Ethyl octanoate.....	204
1,1-Dichloropropane.....	155	Diphenylhydantoin.....	209	Ethyl oleate.....	204
1,2-Dichloropropane.....	154, 155, 166	Diphenyl sulfone.....	193, 195, 197	Ethyl palmitate.....	204
1,3-Dichloropropane.....	97, 155, 166	Dipropylene glycol.....	193, 195, 197	3-Ethyl-3-pentanol.....	193, 195, 197
2,2-Dichloropropane.....	97, 155, 166	Dipropyl sulfide.....	176	Ethyl propionate.....	203, 204
1,1-Dichloro-2-propanone.....	166	Disulfoton.....	158, 162	Ethyl thioether.....	176
1,1-Dichloropropene.....	97, 155	DMEP.....	160	2-Ethylthiophene.....	176
cis-1,3-Dichloropropene.....	97, 154, 155	2,4-D methyl ester.....	165	Ethyl valerate.....	204
trans-1,3-Dichloropropene.....	154, 155	DMF.....	211	Etridiazole.....	162
cis-1,3-Dichloropropylene.....	166	DMP.....	160	Eucalyptol.....	206
trans-1,3-Dichloropropylene.....	166	DNHP.....	160	Eugenol.....	205
1,2-Dichlorotetrafluoroethane.....	154	DNNP.....	160	F	
Dichloroprop.....	165	DNOP.....	160	Famphur.....	162
Dichlorvos.....	162	Dodecanal.....	193, 195, 197	Fenfluramine.....	209
Dicrotophos.....	162	Dodecane.....	186, 193, 195, 197	Fenitrothion.....	162
Dicyclohexylamine.....	193, 195, 197	n-Dodecane.....	87, 88, 174, 179, 181	Fensulfotthion.....	162
Dieldrin.....	162, 164	Dodecanoic acid.....	204	Fenthion.....	162
Diethanolamine.....	94, 184	1-Dodecanol (n-Dodecyl alcohol).....	185, 186,	Flunitrazepam.....	208
Diethoxy isopentane.....	204	.....	193, 195, 197	Fluoranthene.....	69, 99, 156, 157, 159
Diethoxy-3-methylbutane.....	204	2-Dodecanone.....	193, 195, 197	Fluorene.....	69, 99, 156, 157, 159
1,1-Diethoxypropane.....	192	n-Dodecyl chloride.....	185	2-Fluorobiphenyl.....	159
Diethylamine.....	93, 95, 96, 183, 185, 212	n-Dodecyl-N,N-dimethylamine.....	185	2-Fluorophenol.....	159
Diethylbenzene.....	193, 195, 197	DOP.....	160	Fluoxymesterone.....	210
1,2-Diethylbenzene (o-Diethylbenzene).....	174, 180, 181	Doxylamine.....	210	Flurazepam.....	208
1,3-Diethylbenzene (m-Diethylbenzene).....	174, 181	DPP.....	160	Fonofos.....	158
1,4-Diethylbenzene (p-Diethylbenzene).....	74, 180, 181	Dual.....	163	Fonophos.....	162
Diethylene glycol.....	187, 188	E		Formaldehyde.....	189, 192
Diethylenetriamine.....	93, 184, 185	Eicosane.....	193, 195, 197	Formamide.....	192, 193, 195, 197
Diethyl ether.....	192, 211	γ-Elementene.....	203, 205	Formic acid.....	192
Diethylhydroxylamine.....	191	Endosulfan.....	164	Fucitol.....	207
Diethylmethylamine.....	92, 183	Endosulfan I.....	162, 164	2-Furancarboxaldehyde.....	189
Diethyl phthalate.....	159, 167, 193, 195, 197	Endosulfan II.....	162	Furfural.....	188, 203, 204
Diethylpropion.....	209	Endosulfan sulfate.....	162, 164	Furfuryl alcohol.....	188, 193, 195, 197
Diheptyl phthalate.....	167	Endrin.....	162, 164	G	
Dihexyl phthalate.....	167	Endrin aldehyde.....	162, 164	Galactitol.....	207
Diisobutylene.....	175	Endrin ketone.....	164	Geraniol.....	203
Diisopropylbenzene.....	182	Ephedrine.....	209, 210	Geraniol.....	205, 206
Dimethoate.....	162	EPN.....	162	Geranyl acetate.....	203, 205
Dimethoxyethane.....	175	Eptam.....	163	Germacrene-Δ.....	205
1,2-Dimethoxyethane.....	192, 211	Ethanal.....	188	Glucitol.....	207
Dimethoxymethane.....	188, 189	Ethane.....	82, 83, 169, 170, 171, 172, 173	Glucoshepitol.....	207
2,2-Dimethoxypropane.....	192	Ethanethiol.....	176	Glutethimide.....	209
2,3-Dimethylheptane.....	87, 179	Ethanol.....	88, 174, 175, 186, 187, 192, 199,	Glyceraldehyde.....	207
2,6-Dimethyl-4-heptanone.....	193, 195, 197	.....	203, 204, 211, 212	Glycerol.....	187
2,3-Dimethylhexane.....	87, 179	Ethene.....	171	GOAL.....	163
1,3-Dimethyl-2-nitrobenzene.....	158	Ether.....	212	Guaiifenesin.....	210
1,2-Dimethyl-3-nitrobenzene.....	158	Ethion.....	162	H	
2,2-Dimethyl-1-propanol (Neopentanol).....	186	Ethoprop.....	162	Haloperidol.....	208
2,4-Dimethyl-3-pentanone.....	189	Ethosuximide.....	209	Helium.....	168, 169
Dimethylacetamide.....	193, 195, 197	2-Ethoxy butane.....	204	Heptachlor.....	162, 164
N,N-Dimethylacetamide.....	192, 211	2-Ethoxyethanol.....	186, 192	Heptachlor epoxide.....	162, 164
Dimethylamine.....	92, 95, 183	2-Ethoxy ethyl ether.....	190	Heptadecane.....	193, 195, 197
2,6-Dimethylaniline.....	93, 185	Ethyl acetate.....	187, 192, 199, 203, 204, 211, 212	Heptanal.....	188, 189

Heptane.....	174, 186, 188, 190, 193, 195,	208
	197, 199, 211, 212	
<i>n</i> -Heptane	87, 179, 192	
Heptanoic acid.....	200, 204	
Heptanol.....	193, 195, 197	
1-Heptanol.....	186	
2-Heptanol.....	204	
4-Heptanone.....	189, 206	
Hexachlorobenzene.....	159, 160, 162	
Hexachlorobutadiene.....	154, 155, 159, 160	
1,1,2,3,4,4-Hexachloro-1,2-butadiene.....	97, 166	
Hexachlorocyclopentadiene.....	159, 160	
Hexachloroethane.....	159, 160, 193, 195, 197	
Hexachloropropene.....	159	
Hexadecane.....	186	
<i>n</i> -Hexadecyl alcohol.....	185	
<i>n</i> -Hexadecyl chloride.....	185	
<i>n</i> -Hexadecyl- <i>N,N</i> -dimethylamine.....	185	
Hexamethylenediamine.....	184	
Hexamethyleneimine.....	184	
<i>bis</i> -Hexamethylenetriamine.....	184	
Hexamethylphosphoramide.....	162	
Hexanal.....	188, 189, 206	
<i>n</i> -Hexanal.....	203	
Hexane.....	173, 186, 192, 199, 203, 211, 212	
<i>n</i> -Hexane.....	87, 171, 179, 199, 211	
Hexanes.....	82, 170	
<i>n</i> -Hexanoic acid.....	204	
1-Hexanol (<i>n</i> -Hexanol).....	186, 204	
2-Hexanol.....	193, 195, 197	
3-Hexanol.....	193, 195, 197	
Hexanone.....	192	
2-Hexanone.....	192, 211	
Hexazinone.....	163	
<i>trans</i> -2-Hexenal.....	203	
Hexenes.....	170	
<i>trans</i> -2-Hexen-1-ol.....	186	
4-Hexen-3-one.....	189	
Hexyl hexanoate.....	204	
HMMA.....	209	
Hydrocodone.....	210	
Hydrogen.....	84, 169	
Hydrogen sulfide.....	176	
Hydroxybutanoic acid <i>n</i> -butyl ester.....	191	
Hydroxycitronellal.....	206	
4-Hydroxy-4-methyl-2-pentanone.....	189	
I		
Indane.....	180	
Indeno[1,2,3- <i>cd</i>]pyrene.....	99, 156, 157, 159	
Inositol.....	207	
α -Ionone.....	203	
β -Ionone.....	203	
Isoamyl acetate.....	192, 204	
Isoamyl alcohol.....	192, 204	
Isobutanol.....	204	
Isobutane.....	82, 83, 87, 170, 171, 172, 173	
Isobutanol.....	175	
Isobutene.....	171, 173	
Isobutyl acetate.....	192	
Isobutyl alcohol.....	186, 204	
Isobutyrene.....	82, 83, 170, 172	
Isobutyl isobutyrate.....	191	
Isobutyl methacrylate.....	191	
Isobutyl phthalate.....	167	
Isobutyric acid.....	200, 204	
Isodrin.....	159	
<i>d</i> -Isomenthone.....	205	
Isocitane.....	192	
Isopentane.....	82, 170, 171, 172, 173	
Isophorone.....	159	
Isopropanol.....	175, 184, 187, 211, 212	
Isopropyl acetate.....	192, 193, 195, 197, 199	
Isopropyl alcohol.....	88, 174, 203	
Isopropylamine.....	95, 96, 183, 212	
Isopropyl benzene (cumene).....	174, 180, 181, 182,	
	191, 192, 193, 195, 197	
Isopropyl ether.....	192	
Isopropyl methacrylate.....	191	
<i>p</i> -Isopropyl toluene.....	155	
Isosafrole.....	159	
Isovaleric acid.....	200, 204	
K, L		
Kepon.....	159	
Ketamine.....	208	
2-Keto-3-deoxyoctanate.....	207	
<i>cis</i> -Lactone.....	204	
<i>trans</i> -Lactone.....	204	
Leptophos.....	162	
Lidocaine.....	208	
Limonene.....	205, 206	
δ -Limonene.....	203	
<i>l</i> -Limonene.....	205	
<i>trans</i> -Limonene.....	203	
<i>cis</i> -Limonene monoxide.....	203	
<i>trans</i> -Limonene monoxide.....	203	
Linalool.....	203, 205	
M		
Malathion.....	162	
Mannitol.....	207	
MBDB.....	209	
MCPA.....	165	
MCPP.....	165	
MDA.....	209	
MDEA.....	209	
MDMA.....	209	
Medazepam.....	208	
Menthofuran.....	205	
<i>l</i> -Menthol.....	205	
neo-Menthol.....	205	
<i>l</i> -Menthone.....	205	
Methyl acetate.....	205	
Meperidine.....	208	
Mephentermine.....	209	
Meprobamate.....	209	
Merphos.....	162	
Merphos oxone.....	162	
Mesitylene.....	181	
Mesterolone.....	210	
Methacrylate.....	191	
Methacrylic acid <i>n</i> -butyl ester.....	191	
Methadone.....	208	
Methamphetamine.....	209	
Methane.....	82, 83, 168, 169, 170, 171, 172, 173, 199	
Methanol.....	87, 88, 92, 98, 154, 174, 175, 179,	
	183, 186, 187, 189, 192, 199, 203, 204, 211, 212	
Methanthiol.....	176	
Methapyriline.....	210	
Methaqualone.....	209	
Methcathinone.....	209	
Methoxychlor.....	162, 164	
2-Methoxyethanol.....	186, 192	
1,2- <i>bis</i> (2-Methoxyethoxy)ethane.....	190, 193, 195, 197	
<i>bis</i> (2-(2-Methoxyethoxy)ethyl)ether.....	190	
2-Methoxy ethyl ether.....	190	
<i>bis</i> (2-(2-Methoxy)ethyl) ether.....	195, 197	
<i>p</i> -Methoxyphenol.....	193, 195, 197	
Methyl acetate.....	190, 192	
Methylal.....	192	
Methylamine.....	95, 183	
17 α -Methylandrostan-17 β -ol-3-one.....	210	
17 α -Methyl-5-androstene-3 β ,17 β -diol.....	210	
α -Methylbenzene.....	182	
Methyl benzoate.....	190, 206	
Methylbenzothiofenenes.....	176	
α -Methylbenzyl alcohol.....	174, 193, 195, 197	
2-Methyl-1-butanol.....	187	
2-Methyl-2-butanol.....	186	
3-Methyl-1-butanol.....	186, 187	
2-Methyl-2-butene.....	82, 170	
2-Methyl-3-buten-2-ol.....	186	
Methyl <i>tert</i> -butyl ether.....	88, 174, 175, 192	
2-Methyl butyraldehyde.....	204	
3-Methyl butyraldehyde.....	204	
Methyl butyrate.....	190	
Methyl cellosolve.....	199	
3-Methylcholanthrene.....	156, 159	
Methyl cyclohexane.....	192, 211	
Methyl cyclopentane.....	192	
Methyl decanoate.....	190	
Methyldichlorosilane.....	191	
4-Methyl-2,5-dimethoxyamphetamine.....	209	
2-Methyl-4,6-dinitrophenol.....	158, 161	
Methyl disulfide.....	176	
Methylene chloride.....	154, 155, 192, 193, 195, 197,	
	203, 211, 212	
Methylenedioxyamphetamine.....	209	
Methylenedioxyethylamphetamine.....	209	
Methylenedioxyethamphetamine.....	209	
Methylethylamine.....	92	
1-Methylethylbenzene.....	206	
1-Methyl-2-ethylbenzene.....	180	
1-Methyl-3-ethylbenzene.....	180	
1-Methyl-4-ethylbenzene.....	180	
Methyl ethyl ketone.....	199, 211, 212	
Methyl formate.....	190	
5-Methyl-3-heptanone.....	189	
2-Methylhexane.....	87, 179	
Methyl hexanoate.....	190, 193, 195, 197	
5-Methyl-2-hexanone.....	189	
Methyl isopropyl ketone.....	192	
Methyl methanesulfonate.....	159	
Methyl myristate.....	204	
1-Methylnaphthalene.....	99, 156, 159, 180	
2-Methylnaphthalene.....	87, 99, 156, 159, 179, 180	
Methyl octanoate.....	190	
2-Methylpentane.....	192	
3-Methylpentane.....	87, 179	
2-Methyl-2,4-pentanediol.....	188, 193, 195, 197	
2-Methylpentanol.....	174	
2-Methyl-1-pentanol.....	186, 193, 195, 197	
2-Methyl-3-pentanol.....	193, 195, 197	
4-Methyl-2-pentanol.....	186	
4-Methyl-2-pentanone.....	189	
4-Methyl-3-penten-2-one.....	189	
2-Methylphenol.....	158, 159	
3-Methylphenol.....	159	
4-Methylphenol.....	159	
2-Methyl propanal.....	189	
2-Methyl-1-propanol.....	187	
2-Methyl-2-propanol (<i>tert</i> -Butylalcohol).....	186	
Methyl propionate.....	190	
α -Methylstyrene.....	174	
Methyl sulfide.....	176	
17 α -Methyltestosterone.....	210	
2-Methylthiophene.....	176	
3-Methylthiophene.....	176	
4-Methylthiophene.....	154	
Methyltrichlorosilane.....	191	
Methyl valerate.....	190	
Methypyrion.....	209	
Mevinphos.....	162	
Monobutyltin.....	165, 167	
Monocrotophos.....	162	
Monoethanolamine.....	94, 184	
Monopropylene glycol.....	174	
Morphine.....	93, 208	
Morpholine.....	185	
Myrcene.....	203, 205	
N		
Naled.....	162	
Naphthalene.....	69, 87, 99, 155, 156, 157,	
	159, 179, 180, 182	
Naphthalene- <i>d</i> 8.....	159	
1,4-Naphthoquinone.....	159	
Neral.....	203	
Nerol.....	205	
Neryl acetate.....	203, 205	
Nicotine.....	93, 185, 209	
2-Nitroaniline.....	93, 159, 185	
3-Nitroaniline.....	159	
4-Nitroaniline.....	159	
Nitrobenzene.....	158, 159, 182	
Nitrobenzene- <i>d</i> 5.....	159	
3-Nitrobiphenyl.....	167	
Nitroethane.....	193, 195, 197	
Nitrogen.....	168, 169	
Nitromethane.....	192, 211	
2-Nitrophenol.....	93, 158, 159, 161, 185	
4-Nitrophenol.....	158, 159, 161	
1-Nitropropane.....	193, 195, 197	
2-Nitropropane.....	193, 195, 197	
4-Nitroquinoline-1-oxide.....	159	
<i>N</i> -Nitrosoazetidine.....	161	
<i>N</i> -Nitrosodibutylamine.....	185	
<i>N</i> -Nitrosodiethylamine.....	161, 185	
<i>N</i> -Nitrosodisopropylamine.....	185	
<i>N</i> -Nitrosodimethylamine.....	159, 161, 185	
<i>N</i> -Nitrosodipropylamine.....	185	
<i>N</i> -Nitrosohexamethyleneimine.....	161	

Compound Index for GC

N-Nitrosomethylethylamine.....	161	Phenylephrine.....	209	1,4,7,8-TCDD.....	155
N-Nitrosomorpholine.....	161, 185	2-Phenylethanol (Phenylethyl alcohol).....	174, 204	2,3,7,8-TCDD.....	155
N-Nitrosopiperidine.....	161, 185	Phenylethylamine.....	209	Temazepam.....	208
N-Nitroso-di-n-propylamine.....	159	2-Phenyl-2-propanol.....	174	TEPP.....	162
N-Nitrosopyrrolidine.....	161, 185	Phenylpropanolamine.....	209, 210	Terbacil.....	163
2-Nitrotoluene.....	167	Phenyltoloxamine.....	208, 210	Terbufos.....	158, 162
3-Nitrotoluene.....	167	Phorate.....	162	Terbutryne.....	165
4-Nitrotoluene.....	167	Phosmet.....	162	Terbutylazine.....	165
Nonadecane.....	182, 188, 189, 190, 193, 195, 197	Phosphamidon.....	162	p-Terphenyl-d14.....	159
Nonanal.....	188, 189, 193, 195, 197, 203	Phosphamidon isomer.....	162	α-Terpinene.....	203, 205
Nonane.....	193, 195, 197	Picloram methyl ester.....	165	γ-Terpinene.....	203, 205
n-Nonane.....	87, 179	β-Pinene.....	203, 205	Terpinene-4-ol.....	203, 205
1-Nonanol.....	186, 193, 195, 197	α-Pinene.....	203, 205	α-Terpineol.....	203, 205
5-Nonanone.....	193, 195, 197	Piperazine.....	184	Terpinolene.....	203, 205
Nootketone.....	203	Piperitone.....	205	Testosterone.....	210
19-Nortestosterone.....	210	PMA.....	209	Testosterone-17β-cypionate.....	210
19-Nortestosterone-17-propionate.....	210	PMMA.....	209	Testosterone propionate.....	210
O		Prazepam.....	208	Tetrabutyltin.....	165, 167
cis-Ocimene.....	205	Primidone.....	209	Tracacaine.....	208
Octadecane.....	193, 195, 197	Prometon.....	158, 165	1,2,4,5-Tetrachlorobenzene.....	159
n-Octadecyl alcohol.....	185	Prometryne.....	165	1,1,1,2-Tetrachloroethane.....	97, 155, 166
n-Octadecyl-N,N-dimethylamine.....	185	Propachlor.....	163	1,1,2,2-Tetrachloroethane.....	97, 154, 155, 166
Octanal.....	188, 189, 203	Propadiene.....	82, 170, 171, 172, 173	sec-Tetrachloroethane.....	193, 195, 197
n-Octane.....	87, 179	Propanal.....	188, 189, 204	Tetrachloroethene.....	154
Octanoic acid.....	204	Propane.....	82, 83, 87, 169, 170, 171, 172, 173, 179	Tetrachloroethylene.....	97, 155, 166
Octanol.....	203	1-Propanol (n-Propanol).....	175, 186, 187, 192	Tetrachloromethane.....	97, 155, 166
1-Octanol (n-Octyl alcohol).....	185, 186, 189	2-Propanol.....	186, 192	2,3,4,5-Tetrachlorophenol.....	158
3-Octanol.....	188, 205	Propazine.....	163, 165	2,3,4,6-Tetrachlorophenol.....	159
2-Octanone.....	193, 195, 197	Propene.....	171	2,4,5,6-Tetrachloro-m-xylene.....	164
1-Octen-3-ol.....	205	Propionic acid.....	200, 204	Tetradecane.....	186, 189
Octylamine.....	93, 185	n-Propyl acetate.....	199	n-Tetradecyl alcohol.....	185
n-Octyl chloride.....	185	n-Propylamine.....	95, 183	n-Tetradecyl chloride.....	185
n-Octyl-N,N-dimethylamine.....	185	Propylbenzene.....	155, 182, 206	n-Tetradecyl-N,N-dimethylamine.....	185
Octylic acid.....	204	n-Propylbenzene.....	180, 181	Tetraethylene glycol.....	187, 193, 195, 197
di-n-Octyl phthalate.....	159	Propylene.....	82, 169, 170, 171, 172, 173	1,1,1,2-Tetrafluoroethane (CFC-134a).....	86, 170
Ordram.....	163	Propylene glycol.....	187	Tetrahydrofuran.....	192, 199, 206, 211, 212
Oxadiazon.....	163	1,2-Propylene glycol.....	187	Tetrahydrofurfuryl acetate.....	193, 195, 197
Oxygen.....	84, 168, 169	1,3-Propylene glycol.....	187	Tetrahydro-2-methyl furan.....	190
Oxymethalone.....	210	Propyl hexanoate.....	204	1,2,3,4-Tetrahydronaphthalene.....	192, 211
P		1-Propylmercaptan.....	176	1,2,3,5-Tetramethylbenzene.....	180
Paarlan.....	163	2-Propylmercaptan.....	176	1,2,4,5-Tetramethylbenzene.....	180
Papaverine.....	208	Propyne.....	171, 172, 173	Tetrapropyltin.....	165, 167
Parathion-ethyl.....	162	Prowl.....	163	Thionazin.....	162
Parathion-methyl.....	162	Pseudoephedrine.....	209, 210	Thiophene.....	176
PCNB.....	162	Pulegone.....	205	Thioridazine.....	208
PCNB (IS).....	162	Pyrene.....	69, 156, 157, 159	α-Thujene.....	203
Pentachlorobenzene.....	159	Pyridine.....	93, 159, 185, 192, 211, 212	Thymol.....	206
Pentachloronitrobenzene.....	159	Pyrimamine.....	208, 210	Tillam.....	163
Pentachlorophenol.....	158, 159, 161, 165	R		2,4,5-T methyl ester.....	165
Pentadecane.....	182, 188, 190, 193, 195, 197	Rhamnitol.....	207	Tokuthion.....	162
Pentamethylbenzene.....	180	Ribitol.....	207	Tolban.....	163
Pentamethylenediamine.....	184	Ro-Neet.....	163	Toluene.....	87, 97, 98, 154, 155, 166, 174, 179, 180, 181, 182, 191, 192, 193, 195, 197, 199, 206, 211, 212
Pentalol.....	188, 189, 193, 195, 197	Ronnel.....	162	Total heavy hydrocarbons.....	175
Pentane.....	186, 188, 189, 190, 192, 193, 195, 197	S		2,4,5-TP.....	165
iso-Pentane.....	87, 179	Sabinene.....	203, 205	2,4,5-TP (silvex) methyl ester.....	165
n-Pentane.....	82, 87, 170, 171, 172, 173, 179, 199	trans-Sabinenehydrate.....	205	Trazodone.....	208
1-Pentanol (n-Pentanol).....	186, 189, 192, 204	Safrole.....	159	Treflan.....	163
3-Pentanol.....	187, 188, 193, 195, 197	Scopolamine.....	208	Triazolam.....	208
sec-Pentanol.....	204	Secbumeton.....	165	2,4,6-Tribromophenol.....	158, 159
2-Pentanone.....	204	Secobarbital.....	209	Tributyl phosphate.....	162, 193, 195, 197
1-Pentene.....	82, 170	Sencor.....	163	Tributyltin.....	165, 167
cis-2-Pentene.....	82, 170	Simazine.....	163, 165	1,1,2-Trichloroethene.....	211
trans-2-Pentene.....	82, 170	Simetryne.....	165	Trichlorfon.....	162
1-Penten-3-ol.....	186, 188	β-Sitosterol.....	207	Trichloroacetonitrile.....	166
Pentobarbital.....	209	Solvent.....	185	1,2,3-Trichlorobenzene.....	97, 155, 166
cis-Permethrin.....	162	Stigmaesterol.....	207	1,2,4-Trichlorobenzene.....	97, 154, 155, 159, 160, 166
trans-Permethrin.....	162	Stirofos.....	162	1,1,1-Trichloroethane.....	97, 154, 155, 166, 192, 211
Perylene-d12.....	159	Styrene.....	154, 174, 182, 191, 206	1,1,2-Trichloroethane.....	97, 154, 155, 166, 192
α-Phellandrene.....	203	Styrol.....	155	Trichloroethylene.....	97, 154, 155, 166, 192, 211, 212
Phenacetin.....	159	Sulfolane.....	192	Trichloroethane.....	97, 154, 155, 166
Phenanthrene.....	69, 99, 156, 157, 159	Sulfotepp.....	162	Trichlorofluoromethane.....	97, 154, 155, 166
Phenanthrene-d10.....	158, 159	Sulfur dioxide.....	176	Trichloronate.....	162
Phendimetrazine.....	209	Sutan.....	163	2,4,5-Trichlorophenol.....	159
β-Phenethyl alcohol.....	204	T		2,4,6-Trichlorophenol.....	158, 159, 161
Pheniramine.....	210	2,4,5-T.....	165	1,2,3-Trichloropropane.....	97, 155, 166, 193, 195, 197
Phenmetrazine.....	209	TAME.....	175	1,1,1-Trichloro-2-propanone.....	166
Phenobarbital.....	209	1,2,3,4-TCDD.....	155	1,1,2-Trichloro-1,2,2-trifluoroethane.....	154
Phenol.....	93, 158, 159, 161, 174, 185	1,2,3,7-TCDD.....	155	Tridecane.....	193, 195, 197
Phenol-d6.....	159	1,2,3,8-TCDD.....	155	n-Tridecane.....	87, 88, 174, 179
Phenothiazine.....	208	1,2,6,7-TCDD.....	155	Triethanolamine.....	94, 184
2-Phenoxyethanol.....	193, 195, 197	1,2,7,8-TCDD.....	155	Triethylamine.....	92, 96, 183, 212
Phentermine.....	209	1,3,7,8-TCDD.....	155	Triethylbenzene.....	182
Phenylacetylene.....	174			Triethylene glycol.....	193, 195, 197

Triethylene glycol monomethylether.....	94, 184
2,2,2-Trifluoroethanol.....	186
Trifluralin.....	162
Triisobutylene.....	175
Trimethylamine.....	92, 95, 183
1,2,3-Trimethylbenzene.....	180, 182
1,2,4-Trimethylbenzene.....	87, 154, 155, 179, 180, 182, 193, 195, 197
1,3,5-Trimethylbenzene.....	87, 154, 155, 179, 180, 182
Trimethylchlorosilane.....	191
Trimipramine.....	208
2,3,4-Trinitrotoluene.....	167
2,4,5-Trinitrotoluene.....	167
2,4,6-Trinitrotoluene.....	167
Tripelennamine.....	208
Triptylitin.....	165, 167
Triphenylene.....	99, 156
Triphenyl phosphate.....	158, 162
Tripolidine.....	210
U	
Undecanal.....	188, 193, 195, 197
Undecane.....	98, 154, 186, 189, 193, 195, 197
<i>n</i> -Undecane.....	87, 88, 174, 179, 181
1-Undecanol.....	186, 193, 195, 197
V	
Valencene.....	203
<i>n</i> -Valeramide.....	184
Valeric acid.....	204
<i>n</i> -Valeric acid.....	200
Vanillin.....	204, 206
Vernam.....	163
Vinyl benzene.....	98, 154
Vinyl chloride.....	154, 155
Vinylcyclohexene.....	191
4-Vinyl cyclohexene-1.....	175
Viridiflorol.....	205
W, X	
Water.....	189, 192
<i>m</i> -Xylene.....	87, 97, 98, 154, 155, 166, 174, 179, 180, 181, 191, 192, 211
<i>o</i> -Xylene.....	87, 97, 98, 154, 155, 166, 174, 179, 180, 181, 182, 191, 192, 211
<i>p</i> -Xylene.....	87, 97, 98, 154, 155, 166, 174, 179, 180, 181, 182, 192, 193, 195, 197, 211
Xylitol.....	207

SPE**B**

BBP.....	230
Benzopyrene.....	224
Bisphenol A.....	232

C

Carbendazim.....	227
4-Chloro-3-methylphenol.....	229
2-Chlorophenol.....	229
Chlortetracycline.....	225, 228, 231

D

DBP.....	230
DCHP.....	230
DEHP.....	230
DEP.....	230
DHP.....	230
2,4-Dichlorophenol.....	229
2,4-Dimethylphenol.....	229
2,4-Dinitrophenol.....	229
DMP.....	230
Doxycycline.....	225, 228
DPP.....	230
DPrP.....	230

M, N

Melamine.....	217
2-Nitrophenol.....	229
4-Nitrophenol.....	229

O, P

Oxytetracycline.....	225, 228, 231
Pentachlorophenol.....	229
Phenol.....	229

S

Sulfadimidine.....	219, 221
Sulfamerazine.....	219, 221
Sulfamethoxazole.....	219, 221
Sulfamethoxypyridazine.....	219, 221
Sulfapyridine.....	219, 221
Sulfaquinoxaline.....	219, 221
Sulfisoxazole.....	219, 221
Sulphadimethoxine.....	219, 221

T

Tetracycline.....	225, 228, 231
2,4,6-Trichlorophenol.....	229

Product Index

G

GC Columns

DikmaCap™ DM

DM-1	67
DM-1HT	70
DM-1HT SimDist Metal	89
DM-1MS	67
DM-1 SimDist Metal	89
DM-5	68
DM-5Amine	93
DM-5HT	70
DM-5MS	68
DM-5MS / LB	69
DM-17	73
DM-17MS	73
DM-35	71
DM-35 Amine	94
DM-35MS	71
DM-200	74
DM-200MS	74
DM-225	75
DM-500 SimDist Metal	89
DM-624	96
DM-624MS	96
DM-1701	72
DM-2330	79
DM-2560	80
DM-2887	90
DM-2887 Metal	90
DM-AQUA	97
DM-BDTG Metal	91
DM-FAMEWAX	100
DM-FFAP	78
DM-InterWax	77
DM-PAH	99
DM-PLOT Alumina (Al ₂ O ₃)	81
DM-PLOT Alumina / KCl	83
DM-PLOT Alumina / Na ₂ SO ₄	82
DM-PLOT CFC	86
DM-PLOT MS 5A	84
DM-PLOT Q / QS / S / U	85
DM-PONA	87
DM-TCEP	88
DM-TVOC	98
DM-Volatile Amine	92
DM-Wax	76
DM-Wax Amine	95

Guard Columns	66
---------------	----

H

HPLC Columns

Bio-Bond™	52
Endeavorsil™	5
Inspire™	21
Leapsil™	15
Platisil™	54
Spursil™	31

HPLC Guard Columns

EasyGuard™	55
------------	----

P

Preparative Columns

Bio-Bond™	62
Inspire™	61
Luster™	62
Spursil™	61

S

Sample Preparation

Filters

ProMax™ Syringe Filters	124
FitMax™ Syringe Filters	125

SPE Columns

ProElut™ SPE

ProElut™ AL-A	117
ProElut™ AL-B	117
ProElut™ AL-N	117
ProElut™ CARB	117
ProElut™ CARB / NH ₂	117
ProElut™ CN	111
ProElut™ C2	110
ProElut™ C8	110
ProElut™ C18	109
ProElut™ C18-U	109
ProElut™ Florisil	117
ProElut™ GLASS	118
ProElut™ LLE	123
ProElut™ NH ₂	112
ProElut™ PH	111
ProElut™ PLS	115
ProElut™ PSA	112
ProElut™ PWA	116
ProElut™ PWC	116
ProElut™ PXA	115
ProElut™ PXC	115
ProElut™ QuEChERS	119
ProElut™ SAX	113
ProElut™ SCX	113
ProElut™ Silica	111

V

Vials

2 mL Autosampler Vials

Crimp Top Vials	127
Screw Thread Vials	126

Accessory

Vials Rack	127
------------	-----



About Dikma

Dikma Technologies Inc., established in 1993, is a global technology leader committed to developing novel separation and purification solutions for life sciences and related industries. Our core technology portfolio includes products for liquid chromatography, gas chromatography, sample preparation, and bulk purification chromatographic media. We also provide related chromatography accessories.

Quality

Dikma Technologies Inc. is an ISO 9001:2000 Standard Quality Assessed Company to ensure the quality and reliability of our products and services. We are dedicated to the highest standards of production, quality assurance and quality control.

Value

Dikma Technologies Inc. is committed to bringing maximum value to its customers.

DIKMA[®]
A reliable partner for your lab

©Dikma Technologies Inc.
Literature No. 3010

USA

11 Orchard Road, Suite 106
Lake Forest, CA 92630, USA
Tel: 949-716-5810
Fax: 949-716-5811
Toll-Free: 1-877-328-8348
Email: sale@dikmatech.com
www.dikmatech.com

Canada

40 Vogell Road, Unit 57
Richmond Hill, ON L4B 3N6, Canada
Tel: 905-737-8066
Fax: 905-770-0181
Toll-Free: 1-866-889-9072
Email: sales@dimaglass.com
www.dikmatech.com

