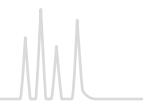




# OPTIMA® · nonpolar capillary columns



## OPTIMA® 1 100 % dimethylpolysiloxane · USP G1 / G2 / G38

### ★ Key features

- Nonpolar phase
- Structure see page 307

### ✓ Recommended application

- Separation of components according to boiling points
- Thick film columns  $\geq 3 \mu\text{m}$  film are especially recommended for solvent analysis.

### ✍ Temperature

- Columns with 0.1–0.32 mm ID and films  $< 3 \mu\text{m}$ :  
 $T_{\text{max}}$  340 °C (long-term temperature),  
 $T_{\text{max}}$  360 °C (short-term max. temperature in a temperature program)
- 0.53 mm ID, films  $< 3 \mu\text{m}$ :  
 $T_{\text{max}}$  320 and 340 °C, resp.
- Thick film columns with films  $\geq 3 \mu\text{m}$ :  
max. temperatures 300 and 320 °C, resp.

### Similar phases

- PERMABOND® SE-30 (see page 336), OV-1, DB-1, SE-30, HP-1, SPB™-1, CP-Sil 5 CB, Rtx®-1, 007-1, BP1, MDN-1, AT™-1, ZB-1, OV-101

## Ordering information

### OPTIMA® 1

	Length → 10 m	12 m	15 m	20 m	25 m	30 m	50 m	60 m
0.1 mm ID (0.4 mm OD)								
0.10 $\mu\text{m}$ film	726024.10			726024.20				
0.40 $\mu\text{m}$ film				726025.20				
0.2 mm ID (0.4 mm OD)								
0.10 $\mu\text{m}$ film					726832.25			
0.20 $\mu\text{m}$ film	726834.12				726834.25		726834.50	
0.35 $\mu\text{m}$ film	726837.12				726837.25		726837.50	
0.50 $\mu\text{m}$ film							726839.50	
0.25 mm ID (0.4 mm OD)								
0.10 $\mu\text{m}$ film	726038.10		726038.15		726038.25	726038.30		726038.60
0.25 $\mu\text{m}$ film	726050.10		726050.15		726050.25	726050.30	726050.50	726050.60
0.50 $\mu\text{m}$ film	726081.10				726081.25	726081.30	726081.50	726081.60
1.00 $\mu\text{m}$ film					726802.25	726802.30	726802.50	726802.60
0.32 mm ID (0.5 mm OD)								
0.10 $\mu\text{m}$ film	726301.10				726301.25	726301.30	726301.50	726301.60
0.25 $\mu\text{m}$ film	726302.10		726302.15		726302.25	726302.30	726302.50	726302.60
0.35 $\mu\text{m}$ film					726821.25	726821.30	726821.50	726821.60
0.50 $\mu\text{m}$ film	726304.10				726304.25	726304.30	726304.50	726304.60
1.00 $\mu\text{m}$ film	726323.10		726323.15		726323.25	726323.30	726323.50	726323.60
3.00 $\mu\text{m}$ film					726805.25	726805.30	726805.50	726805.60
5.00 $\mu\text{m}$ film	726931.10				726931.25	726931.30	726931.50	
0.53 mm ID (0.8 mm OD)								
0.50 $\mu\text{m}$ film			726519.15		726519.25	726519.30		
1.00 $\mu\text{m}$ film	726529.10		726529.15		726529.25	726529.30		
2.00 $\mu\text{m}$ film	726521.10				726521.25	726521.30	726521.50	
5.00 $\mu\text{m}$ film	726926.10				726926.25	726926.30	726926.50	

In addition to this standard program we will be happy to supply columns custom-made to your specifications. Information about scope of delivery, special cages and integrated guard columns see additional information for GC columns on page 303.



# OPTIMA<sup>®</sup> · nonpolar capillary columns



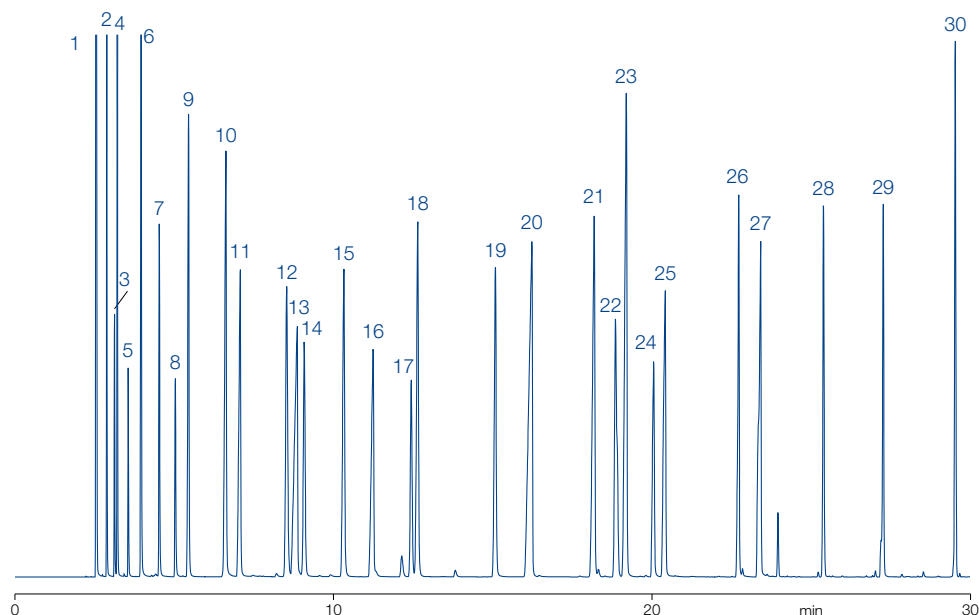
## Solvent analysis

MN Appl. No. 201390

Column: OPTIMA<sup>®</sup> 1, 60 m x 0.32 mm ID, 1.0 µm film  
Sample: solvent mixture, courtesy of J. Lutz, Alcan Rorschach, Switzerland  
Injection: 0.4 µL, split 1:60  
Carrier gas: H<sub>2</sub>, 120 kPa  
Temperature: 50 °C (9 min) → 90 °C, 4 °C/min → 280 °C (2 min), 14 °C/min  
Detector: FID 300 °C

### Peaks:

- |                                    |                            |
|------------------------------------|----------------------------|
| 1. Methanol                        | 26. Heptanol               |
| 2. Ethanol                         | 27. Ethyl diglycol         |
| 3. Acetone                         | 28. Butyl diglycol         |
| 4. 2-Propanol                      | 29. Butyl glycol acetate   |
| 5. Methyl acetate                  | 30. Butyl diglycol acetate |
| 6. <i>n</i> -Propanol              |                            |
| 7. Methyl ethyl ketone             |                            |
| 8. Ethyl acetate                   |                            |
| 9. Isobutanol                      |                            |
| 10. <i>n</i> -Butanol              |                            |
| 11. 1-Methoxy-2-propanol           |                            |
| 12. Isooctane                      |                            |
| 13. Ethyl glycol                   |                            |
| 14. Isoheptane                     |                            |
| 15. Methyl isobutyl ketone         |                            |
| 16. 1-Ethoxy-2-propanol            |                            |
| 17. Toluene                        |                            |
| 18. Isobutyl acetate               |                            |
| 19. Butyl acetate                  |                            |
| 20. 4-Hydroxy-4-methyl-2-pentanone |                            |
| 21. 1-Methoxy-2-propyl acetate     |                            |
| 22. Xylene                         |                            |
| 23. Cyclohexanone                  |                            |
| 24. Ethyl glycol acetate           |                            |
| 25. Butyl glycol                   |                            |





# OPTIMA® · nonpolar capillary columns



## OPTIMA® 1 MS 100 % dimethylpolysiloxane · USP G1 / G2 / G38

### ★ Key features

- Selectivity identical to OPTIMA® 1, Phase with low bleeding
- Structure see page 307

### ✓ Recommended application

- GC/MS and ECD, general analysis at trace level

### ✍ Temperature

- T<sub>max</sub> 340 °C (long-term temperature), T<sub>max</sub> 360 °C (short-term max. temperature in a temperature program)

### Similar phases

- Ultra-1, DB-1MS, HP-1MS, Rxi®-1MS, Rtx®-1MS, Equity™-1, AT™-1MS, VF-1MS, CP-Sil 5 CB MS

## Ordering information

### OPTIMA® 1 MS

	Length →					
	12 m	15 m	25 m	30 m	50 m	60 m
0.2 mm ID (0.4 mm OD)						
0.20 µm film			726201.25		726201.50	
0.35 µm film	726203.12					
0.25 mm ID (0.4 mm OD)						
0.25 µm film		726205.15		726205.30		726205.60
0.32 mm ID (0.5 mm OD)						
0.25 µm film				726202.30		726202.60

In addition to this standard program we will be happy to supply columns custom-made to your specifications. Information about scope of delivery, special cages and integrated guard columns see additional information for GC columns on page 303.

## OPTIMA® 1 MS Accent 100 % dimethylpolysiloxane · USP G1 / G2 / G38

### ★ Key features

- Selectivity identical to OPTIMA® 1, nonpolar phase
- Lowest column bleed
- Solvent rinsing for removal of impurities applicable
- Increased sensitivity due to an unmatched low background level
- Structure see page 307

### ✓ Recommended application

- Ideal for ion trap and quadrupole MS detectors
- Perfect inertness for basic compounds
- All-round phase for environmental analysis, trace analysis, EPA methods, pesticides, PCB, food and drug analysis

### ✍ Temperature

- T<sub>max</sub> 340 °C (long-term temperature), T<sub>max</sub> 360 °C (short-term max. temperature in a temperature program)

### Similar phases

- Ultra-1, DB-1MS, HP-1MS, Rxi®-1MS, Rtx®-1MS, Equity™-1, AT™-1MS, VF-1MS, CP-Sil 5 CB MS



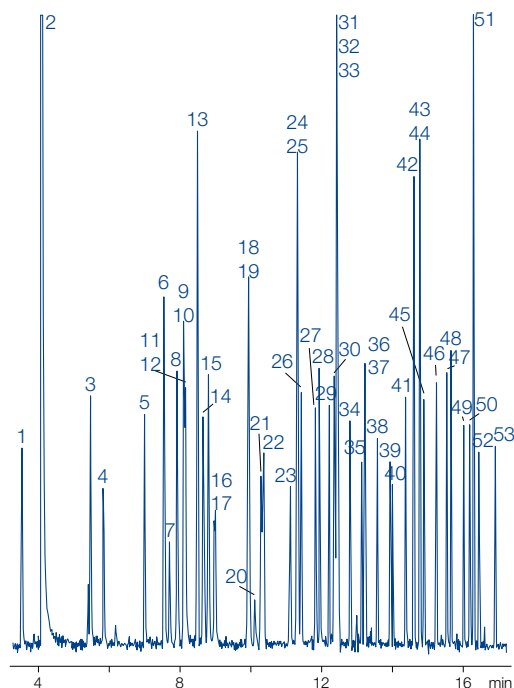
## EPA 8140/8141/8141 A Organophosphorus pesticides

MN Appl. No. 213030

Column: OPTIMA® 1 MS Accent, 30 m x 0.32 mm ID, 0.50 µm film  
 Sample: 0.2 µg/mL in hexane,  
 8140/8141 OP pesticides calibration mix A  
 and 8141 OP pesticides calibration mix B;  
 IS triphenyl phosphate and tributyl phosphate  
 Injection: 250 °C, splitless (hold 1 min)  
 Carrier gas: He, 1 mL/min, constant pressure  
 Temperature: 100 °C → 180 °C, 10 °C/min (2 min) → 300 °C, 18 °C/min (3 min)  
 Detector: FPD (Flame Photometric Detector), 280 °C

### Peaks:

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



## Ordering information

### OPTIMA® 1 MS Accent

	Length →				
	15 m	25 m	30 m	50 m	60 m
0.2 mm ID (0.4 mm OD)					
0.20 µm film		725801.25		725801.50	
0.25 mm ID (0.4 mm OD)					
0.25 µm film	725805.15		725805.30		725805.60
0.50 µm film			725806.30		725806.60
0.32 mm ID (0.5 mm OD)					
0.25 µm film			725802.30		725802.60
0.50 µm film			725807.30		725807.60

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