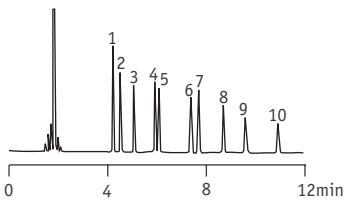
VertiBond™ 1301 Capillary Columns

- **6% Cyanopropylphenyl, 94% Dimethylpolysiloxane**
- **Intermediate polar stationary phase**
- **Equivalent to USP G43**
- **High temperature range**
- **High efficiency, high inertness columns**

VertiBond™ 1301 column contains 6% Cyanopropylphenyl, 94% Dimethylpolysiloxane stationary phases. This intermediate polarity phase is specially developed to equivalent to USP G43 for analysis of residual solvents (OVI) in pharmaceutical products. VertiBond™ 1301 also ideals for acidic and basic compounds with a wide range of polarity like pesticides or herbicides.

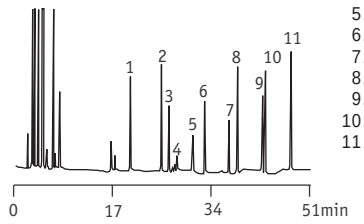
Test mixture



1. n-Undecane
2. 1-Octanol
3. Methyl octanoate
4. n-Dodecane
5. 2,6-Dimethylphenol
6. 2,6-Dimethylaniline
7. Naphthalene
8. n-Tridecane
9. 1-Decanol
10. Methyl decanoate

Column: VertiBond™ 1301, 30m x 0.25 mm, 1.0µm
Temp: 150°C
Injector: Split 100ml at 250°C
Detector: FID 280°C
Carrier Gas: Hydrogen

Grob test mixture



1. n-decane
2. n-undecane
3. 1-octanol
4. nonanal
5. 2,6-dimethylphenol
6. 2,6-dimethylaniline
7. unknown
8. methyl decanoate
9. N,N-dicyclohexylamine
10. methyl undecanoate
11. methyl dodecanoate

Column: VertiBond™ 1301, 30m x 0.25mm, 1.0µm
Temp: 40°C to190°C, 3°C/min
Injector: Split 100ml/min at 250°C
Detector: FID
Carrier Gas: Hydrogen

VertiBond™ 1301 Specifications	
Phase:	6% Cyanopropylphenyl, 94% Dimethylpolysiloxane
Polarity:	Intermediate Polar
USP Designation:	G43
Ideal for:	Volatile Organics, Pharmaceutical Products, and EPA Method 612

VertiBond™ 1301 Equivalent Phase	
Restek	Rtx-1301
Agilent	HP-1301, DB-1301, DB-624
Supelco	SPB-1301, OVI-G43
Alltech	AT-1301
SGE	BPX-624
Varian	CP-1301

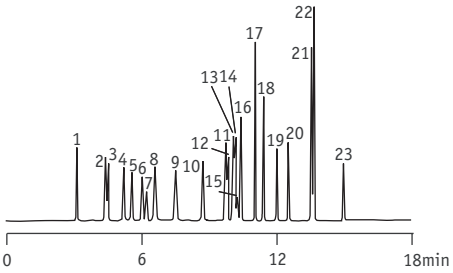
Ordering Information

Length (m)	I.D. (mm)	Film (µm)	Temp. (°C)	Part No.
15	0.25	0.10	280/300	0411-2001
		0.25	280/300	0411-2051
		0.50	280/300	0411-2091
		1.00	280/300	0411-2111
	0.32	0.10	280/300	0411-3001
		0.25	280/300	0411-3051
		0.50	280/300	0411-3091
		1.00	280/300	0411-3111
	0.53	0.10	260/280	0411-5001
		0.25	260/280	0411-5051
		0.50	260/280	0411-5091
		1.00	260/280	0411-5111
		1.50	260/280	0411-5151
		3.00	260/280	0411-5191
30	0.25	0.10	280/300	0411-2003
		0.25	280/300	0411-2053
		0.50	280/300	0411-2093
		1.00	280/300	0411-2113
	0.32	0.10	280/300	0411-3003
		0.25	280/300	0411-3053
		0.50	280/300	0411-3093
		1.00	280/300	0411-3113
	0.53	0.10	260/280	0411-5003
		0.25	260/280	0411-5053
		0.50	260/280	0411-5093
		1.00	260/280	0411-5113
		1.50	260/280	0411-5153
		3.00	260/280	0411-5193

VertiBond™ 1301

Ordering Information				
Length (m)	I.D. (mm)	Film (µm)	Temp. (°C)	Part No.
60	0.25	0.10	280/300	0411-2005
		0.25	280/300	0411-2055
		0.50	280/300	0411-2095
		1.00	280/300	0411-2115
	0.32	0.10	280/300	0411-3005
		0.25	280/300	0411-3055
		0.50	280/300	0411-3095
		1.00	280/300	0411-3115
	0.53	0.10	260/280	0411-5005
		0.25	260/280	0411-5055
		0.50	260/280	0411-5095
		1.00	260/280	0411-5115
		1.50	260/280	0411-5155
		3.00	260/280	0411-5195

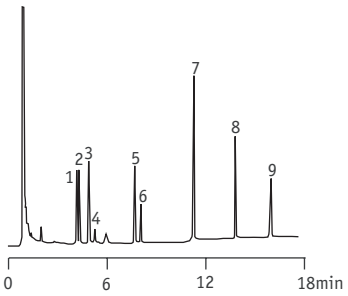
Organic Volatile Impurities



Column: VertiBond™ 1301, 30 m x 0.53 mm, 3.0µm
Temp: 35°C (hold 8 min) to 240°C at 20°C/min
Injector: 0.5µL Split injection of residual solvents at 180°C/260°C (split ratio: 30:1)
Detector: FID
Carrier Gas: Helium 25cm/sec at 35°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. Dimethylformamide

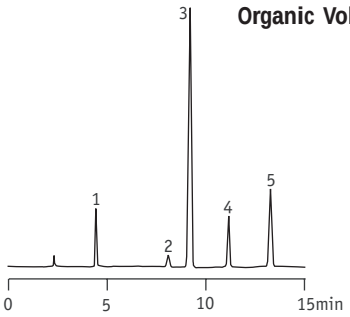
EPA Method 612: Chlorinated Hydrocarbons



Column: VertiBond™ 1301, 30m x 0.53mm, 3.0µm
Temp: 90°C (4 min hold) to190°C at 10°C/min
Detector: FID
Carrier Gas: Helium at 8.1mL/min

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

Organic Volatile



Column: VertiBond™ 1301, 30m x 0.53mm, 3.0µm
Temp: 40°C
Injector: 1µL direct 140°C
Detector: FID 260°C
Carrier Gas: Helium 35cc/sec

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