

VertiBond™ 1301

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 rang of polarity like pesticides or herbicides.



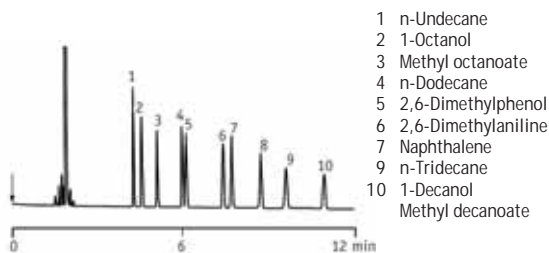
VertiBond™ 1301 Capillary Columns				
Length (m)	I.D. (mm)	Film (µm)	Temp. Limits (°C)	Part No.
15	0.25	0.10	280/300	0411-2001
		0.25	280/300	0411-2051
		0.50	280/300	0411-2091
		1.00	280/300	0411-2111
	0.32	0.10	280/300	0411-3001
		0.25	280/300	0411-3051
		0.50	280/300	0411-3091
		1.00	280/300	0411-3111
	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	3.00	260/280	0411-5153	
		260/280	0411-5193	

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

VertiBond™ 1301 Capillary Columns				
Length (m)	I.D. (mm)	Film (µm)	Temp. Limits (°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	3.00	260/280	0411-5155	
		260/280	0411-5195	

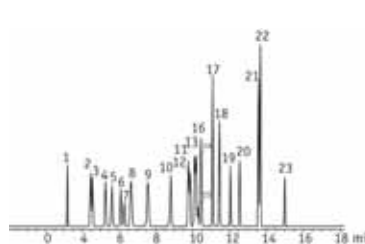
Test mixture



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

Column: VertiBond™ 1301, 30m x 0.25 mm, 1.0µm
 Part No.: 0411-2113
 Temp: 150°C
 Injector: Split 100ml at 250°C
 Detector: FID 280°C
 Carrier Gas: Hydrogen

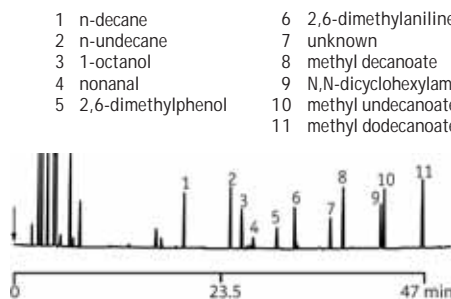
Organic Volatile Impurities



- 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

Column: VertiBond™ 1301, 30 m x 0.53 mm, 3.0µm
 Part No.: 0411-5193
 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

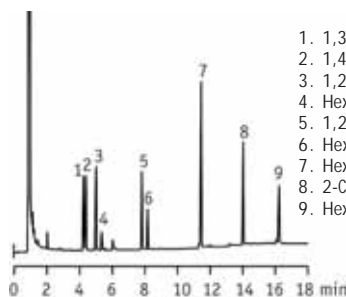
Grob test mixture



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

Column: VertiBond™ 1301, 30m x 0.25mm, 1.0µm
 Part No.: 0411-2113
 Temp: 40°C to 190°C, 3°C/min
 Injector: Split 100ml/min at 250°C
 Detector: FID
 Carrier Gas: Hydrogen

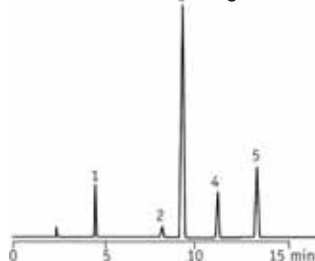
EPA Method 612: Chlorinated Hydrocarbons



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

Column: VertiBond™ 1301, 30m x 0.53mm, 3.0µm
 Part No.: 0411-5193
 Temp: 90°C (4 min hold) to 190°C at 10°C/min
 Detector: FID
 Carrier Gas: Helium at 8.1mL/min

Organic Volatile



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

Column: VertiBond™ 1301, 30m x 0.53mm, 3.0µm
 Part No.: 0411-5193
 Temp: 40°C
 Injector: 1µL direct 140°C
 Detector: FID 260°C
 Carrier Gas: Helium 35cc/sec