

## GC Columns



GC Columns

OV Micro-pak Column

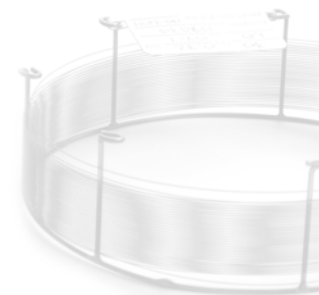
Glass Columns

Custom-Made Packed Columns

*im*Chem

# SUMMARY

## GC Columns



### GC Columns

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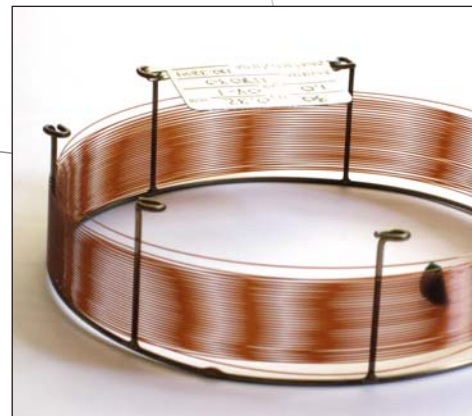
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# GC COLUMNS

## The Fused Silica Tubing

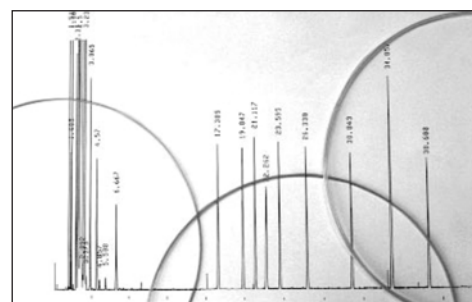
The capillary columns manufactured by Ohio Valley are produced from the purist form of glass, namely fused silica. Fused silica capillaries consist of fused silica tubing (SiO<sub>2</sub>) and many external coatings of polyimide.

It is the polyimide coating that is primarily responsible for the notorious flexibility of the capillary column. Our tubing can withstand temperatures of over 425°C. However, the polyimide coating, along with the upper operating temperature of the liquid phase, is what limits the high temperature end of the capillary column. At Ohio Valley before the preparation of the capillary column, all of our tubing goes through a QC test — making sure it meets the highest standards. If it does not, it is rejected back to the manufacturer. OHIO VALLEY continually selects tubing from several manufacturers and also works with each of its tubing suppliers to help them improve the quality of their product.



## The Deactivated Tubing

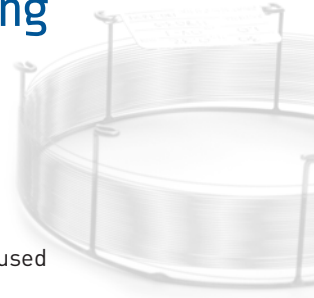
Although the tubing that comes from the manufacturers is an excellent grade, it is not suitable for coating stationary phases. Ohio Valley typically uses highly advanced deactivation techniques at extreme temperatures to ensure that the GC capillary columns produced are the most inert possible. Our deactivated tubing is excellent to use as guard columns or retention gap columns. In fact, every piece of deactivated tubing is pretested before we sell it. Our tests yield tubing that is free from defects and exhibits extremely low surface activity. We specially deactivate tubing for the more polar phases, which allows us to better wet polar phases for higher efficiencies and theoretical plates.



## Bonding & Conditioning

Once the column has been coated to the proper film thickness, Ohio Valley chemically bonds and cross links the column. All OV columns are bonded and cross linked. Non bonded phase columns are not offered. Each column is conditioned to achieve excellent thermal stability.

The conditioning process is an important part of manufacturing a capillary column. The conditioning techniques used give an excellent thermal stability and allow a long lifetime for the column.

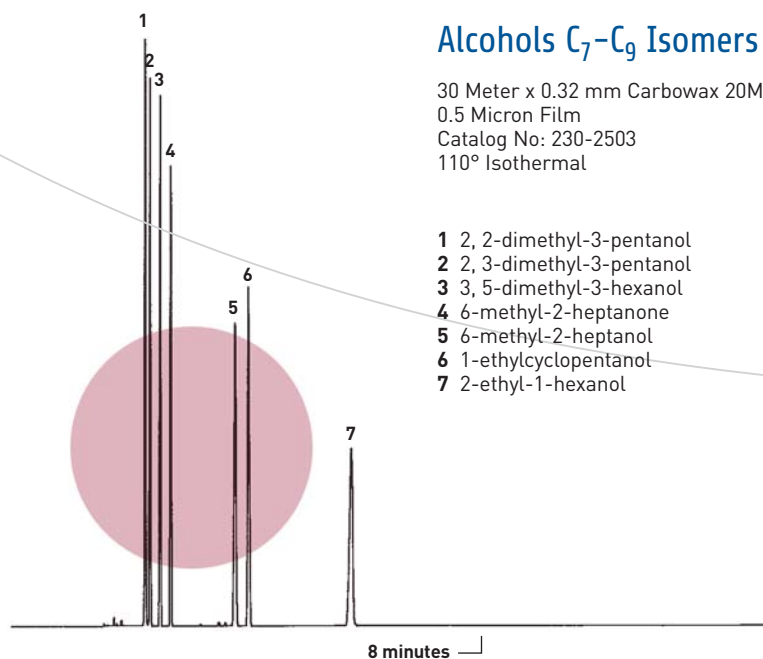


## Testing

Each OV capillary column is tested — individually. We do not batch test columns. We test each column; sometimes we use two or three different test mixes. Our test mixes give an excellent benchmark for rejecting or approving the final column. We continually push our QC department for better columns. Every time we are satisfied with our test results, we continue to make more demands on our columns. Also, we are happy to consider “special testing.” We will run your sample on our column.

## Custom Manufacturing

Interested in a custom length, ID, Phase, or film thickness? Special columns to fit your individual analysis needs can be manufactured. The price is usually not any more than the stock columns. Delivery times, depending on the column, take between 14 to 20 days. Ohio Valley has a special manufacturing group to deal with custom columns. An excellent quality capillary column will be manufactured — quickly.



# OV-1

## 100% Dimethylpolysiloxane

### Features:

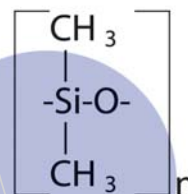
Non Polar  
Bonded and Crosslinked  
Wide Range of Applications  
High Temperature Range  
Equivalent to USP Phase G2

### Applications:

Amines  
Flavors  
Fragrances  
Hydrocarbons  
PCB's  
Pesticides  
Phenols

### Similar Phases:

BP-1                      HP-101  
ZB-1                      Rtx-1  
CP-Sil 5CB              SE-30  
DB-1                      SP-2100  
HP-1                      SPB-1



ID	Film micron	Temperature Limit (Celsius)	15 Meter	30 Meter	60 Meter	105 Meter
0.25mm	0.10	-60 to 330/350	115-2501	130-2501	160-2501	1105-2501
0.25mm	0.25	-60 to 330/350	115-2502	130-2502	160-2502	1105-2502
0.25mm	0.50	-60 to 330/350	115-2503	130-2503	160-2503	1105-2503
0.25mm	1.00	-60 to 320/340	115-2504	130-2504	160-2504	1105-2504
0.32mm	0.10	-60 to 330/350	115-3201	130-3201	160-3201	1105-3201
0.32mm	0.25	-60 to 330/350	115-3202	130-3202	160-3202	1105-3202
0.32mm	0.50	-60 to 330/350	115-3203	130-3203	160-3203	1105-3203
0.32mm	1.00	-60 to 330/350	115-3204	130-3204	160-3204	1105-3204
0.32mm	1.50	-60 to 320/340	115-3210	130-3210	160-3210	1105-3210
0.32mm	3.00	-60 to 310/330	115-3205	130-3205	160-3205	1105-3205
0.32mm	5.00	-60 to 260/280	115-3206	130-3206		
0.53mm	0.10	-60 to 320/340	115-5301	130-5301	160-5301	
0.53mm	0.25	-60 to 320/340	115-5302	130-5302	160-5302	
0.53mm	0.50	-60 to 310/330	115-5303	130-5303	160-5303	
0.53mm	1.00	-60 to 310/330	115-5304	130-5304	160-5304	
0.53mm	1.50	-60 to 310/330	115-5310	130-5310	160-5310	
0.53mm	3.00	-60 to 270/290	115-5311	130-5311	160-5311	1105-5311
0.53mm	5.00	-60 to 270/290	115-5312	130-5312	160-5312	1105-5312

ID	Film micron	Temperature Limit (Celsius)	15 Meter	30 Meter	60 Meter
0.45mm	0.13	-60 to 340/360	115-4513		
0.45mm	0.42	-60 to 300/320	115-4542	130-4542	
0.45mm	1.27	-60 to 300/320	115-4527	130-4527	160-4527
0.45mm	2.55	-60 to 270/290	115-4555	130-4555	
0.45mm	4.25	-60 to 270/290	115-4525	130-4525	

# OV-1ms

## 100% Dimethylpolysiloxane

ID	Film micron	Temperature Limit (Celsius)	15 Meter	30 Meter
0.25mm	0.10	-60 to 330/360	115-3901	130-3901
0.25mm	0.25	-60 to 330/360	115-3902	130-3902
0.25mm	0.50	-60 to 330/360	115-3903	130-3903
0.32mm	0.10	-60 to 320/360	115-4601	130-4601
0.32mm	0.25	-60 to 330/360	115-4602	130-4602
0.32mm	0.50	-60 to 330/360	115-4603	130-4603
0.53mm	0.50	-60 to 330/360	115-6703	130-6703

Identical selectivity to OV-1  
(USP G2)  
Very low bleed characteristics  
Bonded and cross-linked  
Non-polar

# OV-5

## 5% Diphenyl, 95% Dimethylpolysiloxane

### Features:

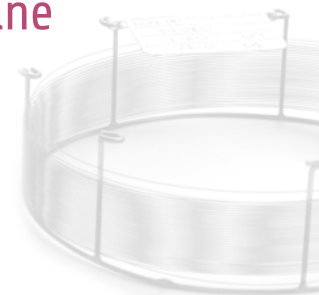
Non Polar  
Bonded and Crosslinked  
High Temperature Range  
Equivalent to USP Phase G27  
General Purpose Column  
Solvent Rinsable

### Applications:

Alkaloids  
Aromatics  
Drugs of Abuse  
Fatty Acid Methyl Esters  
Herbicides  
Hydrocarbons  
Halogenated Compounds  
Pesticides

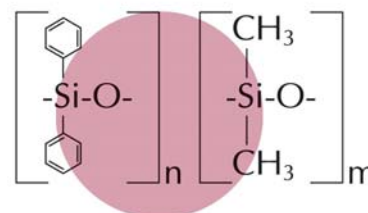
### Similar Phases:

BP-5  
ZB-5  
CP-Sil 8CB  
DB-5  
HP-5  
SPB-5  
Rtx-5



ID	Film micron	Temperature Limit (Celsius)	15 Meter	30 Meter	60 Meter	105 Meter
0.25mm	0.10	-60 to 330/350	515-2501	530-2501	560-2501	5105-2501
0.25mm	0.25	-60 to 330/350	515-2502	530-2502	560-2502	5105-2502
0.25mm	0.50	-60 to 330/350	515-2503	530-2503	560-2503	5105-2503
0.25mm	1.00	-60 to 320/340	515-2504	530-2504	560-2504	5105-2504
0.32mm	0.10	-60 to 330/350	515-3201	530-3201	560-3201	5105-3201
0.32mm	0.25	-60 to 330/350	515-3202	530-3202	560-3202	5105-3202
0.32mm	0.50	-60 to 330/350	515-3203	530-3203	560-3203	5105-3203
0.32mm	1.00	-60 to 330/350	515-3204	530-3204	560-3204	5105-3204
0.32mm	1.50	-60 to 310/330	515-3210	530-3210	560-3210	5105-3210
0.53mm	0.10	-60 to 320/340	515-5301	530-5301	560-5301	
0.53mm	0.25	-60 to 320/340	515-5302	530-5302	560-5302	
0.53mm	0.50	-60 to 320/340	515-5303	530-5303	560-5303	
0.53mm	1.00	-60 to 310/330	515-5304	530-5304	560-5304	
0.53mm	1.50	-60 to 310/330	515-5310	530-5310	560-5310	
0.53mm	3.00	-60 to 270/290	515-5305	530-5311	560-5311	
0.53mm	5.00	-60 to 270/290	515-5306	530-5312	560-5312	5105-5312

ID	Film micron	Temperature Limit (Celsius)	15 Meter	30 Meter
0.45mm	0.42	-60 to 300/320	515-4542	530-4542
0.45mm	1.27	-60 to 300/320	515-4527	530-4527



# OV-5ms

## 5% Diphenyl, 95% Dimethylpolysiloxane

ID	Film micron	Temperature Limit (Celsius)	15 Meter	30 Meter
0.25mm	0.10	-60 to 330/360	515-3901	530-3901
0.25mm	0.25	-60 to 330/360	515-3902	530-3902
0.25mm	0.50	-60 to 330/360	515-3903	530-3903
0.32mm	0.10	-60 to 320/360	515-4601	530-4601
0.32mm	0.25	-60 to 330/360	515-4602	530-4602
0.32mm	0.50	-60 to 330/360	515-4603	530-4603
0.53mm	0.50	-60 to 330/360	515-6703	530-6703

Exact equivalent to OV-5 (USP G27)  
Very low bleed characteristics  
Bonded and cross-linked  
Non-polar

# OV-20

## 20% Diphenyl, 80% Dimethylpolysiloxane

### Features:

Low to Mid Polarity  
Bonded and Crosslinked  
Solvent Rinsable

### Applications:

Alcoholic Beverages  
Flavor Aromatics  
Volatile Compounds

### Similar Phases:

DB-20  
Rtx-20  
SPB-20  
VOCOL



ID	Film micron	Temperature Limit (Celsius)	15 Meter	30 Meter	60 Meter
0.25mm	0.10	-20 to 300/320	2015-2501	2030-2501	2060-2501
0.25mm	0.25	-20 to 300/320	2015-2502	2030-2502	2060-2502
0.25mm	0.50	-20 to 290/310	2015-2503	2030-2503	2060-2503
0.25mm	1.00	-20 to 280/300	2015-2504	2030-2504	2060-2504
0.32mm	0.10	-20 to 300/320	2015-3201	2030-3201	2060-3201
0.32mm	0.25	-20 to 300/320	2015-3202	2030-3202	2060-3202
0.32mm	0.50	-20 to 290/310	2015-3203	2030-3203	2060-3203
0.32mm	1.00	-20 to 280/300	2015-3204	2030-3204	2060-3204
0.32mm	3.00	-20 to 250/270	2015-3205	2030-3205	2060-3205
0.53mm	0.10	-20 to 260/280	2015-5301	2030-5301	2060-5301
0.53mm	0.25	-20 to 260/280	2015-5302	2030-5302	2060-5302
0.53mm	0.50	-20 to 260/280	2015-5303	2030-5303	2060-5303
0.53mm	1.00	-20 to 260/280	2015-5304	2030-5304	2060-5304
0.53mm	1.50	-20 to 250/270	2015-5310	2030-5310	2060-5310
0.53mm	3.00	-20 to 240/260	2015-5311	2030-5311	2060-5311

# OV-35

## 35% Diphenyl, 65% Dimethylpolysiloxane

### Features:

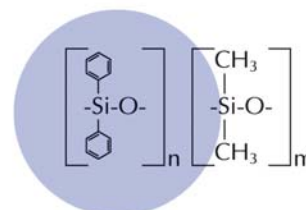
Mid Polarity - Low Bleed  
Bonded and Crosslinked  
Equivalent to USP Phase G42  
Solvent Rinsable

### Applications:

Amines  
Aroclors  
Pesticides  
Pharmaceuticals

### Similar Phases:

AT-35  
PE-35  
SPB-35  
Rtx-35  
DB-35  
HP-35



ID	Film micron	Temperature Limit (Celsius)	15 Meter	30 Meter	60 Meter
0.25mm	0.10	40 to 300/320	3515-2500	3530-2500	3560-2500
0.25mm	0.25	40 to 300/320	3515-2502	3530-2502	3560-2502
0.25mm	0.50	40 to 300/320	3515-2503	3530-2503	3560-2503
0.25mm	1.00	40 to 280/300	3515-2504	3530-2504	3560-2504
0.32mm	0.10	40 to 300/320	3515-3200	3530-3200	3560-3200
0.32mm	0.25	40 to 300/320	3515-3202	3530-3202	3560-3202
0.32mm	0.50	40 to 300/320	3515-3203	3530-3203	3560-3203
0.32mm	1.00	40 to 300/320	3515-3204	3530-3204	3560-3204
0.32mm	1.50	40 to 280/300	3515-3210	3530-3210	3560-3210
0.53mm	0.10	40 to 280/300	3515-5300	3530-5300	3560-5300
0.53mm	0.25	40 to 280/300	3515-5302	3530-5302	3560-5302
0.53mm	0.50	40 to 280/300	3515-5303	3530-5303	3560-5303
0.53mm	1.00	40 to 280/300	3515-5304	3530-5304	3560-5304
0.53mm	1.50	40 to 260/280	3515-5310	3530-5310	3560-5310

ID	Film micron	Temperature Limit (Celsius)	15 Meter	30 Meter
0.45mm	0.42	40 to 300/320		3530-4542
0.45mm	0.85	40 to 280/300	3515-4585	3530-4585

# OV-1301

## 6% Cyanopropylphenyl Methylpolysiloxane

### Features:

Low to Mid Polarity  
Bonded and Crosslinked  
Solvent Rinsable  
Equivalent to USP Phase G43

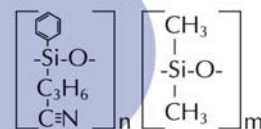
### Applications:

Volatile Organics  
Pharmaceutical Samples  
Alcohols - Aroclors - PCB's  
Oxygenates - Pesticides

### Similar Phases:

DB-1301  
HP-1301  
PE-1301  
Rtx-1301

ID	Film micron	Temperature Limit (Celsius)	15 Meter	30 Meter	60 Meter
0.25mm	0.10	-20 to 280/300	815-2501	830-2501	860-2501
0.25mm	0.25	-20 to 280/300	815-2502	830-2502	860-2502
0.25mm	0.50	-20 to 280/300	815-2503	830-2503	860-2503
0.25mm	1.00	-20 to 280/300	815-2504	830-2504	860-2504
0.32mm	0.10	-20 to 280/300	815-3201	830-3201	860-3201
0.32mm	0.25	-20 to 280/300	815-3202	830-3202	860-3202
0.32mm	0.50	-20 to 280/300	815-3203	830-3203	860-3203
0.32mm	1.00	-20 to 280/300	815-3204	830-3204	860-3204
0.53mm	0.10	-20 to 260/280	815-5301	830-5301	860-5301
0.53mm	0.25	-20 to 260/280	815-5302	830-5302	860-5302
0.53mm	0.50	-20 to 260/280	815-5303	830-5303	860-5303
0.53mm	1.00	-20 to 260/280	815-5304	830-5304	860-5304
0.53mm	1.50	-20 to 260/280	815-5310	830-5310	860-5310
0.53mm	3.00	-20 to 260/280	815-5311	830-5311	860-5311



# OV-1701

## 14% Cyanopropylphenyl Methylpolysiloxane

### Applications:

Pharmaceutical Samples  
Alcohols  
Oxygenates - Pesticides

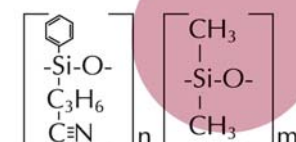
Aroclors  
PCBs  
Solvents

### Similar Phases:

BP-10  
CB-1701  
CP-Sil 19CB

DB-1701  
Rtx-1701

ID	Film micron	Temperature Limit (Celsius)	15 Meter	30 Meter	60 Meter
0.25mm	0.10	-20 to 280/300	415-2500	430-2500	460-2500
0.25mm	0.15	-20 to 280/300	415-2501	430-2501	460-2501
0.25mm	0.25	-20 to 280/300	415-2502	430-2502	460-2502
0.25mm	0.50	-20 to 280/300	415-2503	430-2503	460-2503
0.25mm	1.00	-20 to 280/300	415-2504	430-2504	460-2504
0.32mm	0.10	-20 to 280/300	415-3200	430-3200	460-3200
0.32mm	0.15	-20 to 280/300	415-3201	430-3201	460-3201
0.32mm	0.25	-20 to 280/300	415-3202	430-3202	460-3202
0.32mm	0.50	-20 to 280/300	415-3203	430-3203	460-3203
0.32mm	1.00	-20 to 280/300	415-3204	430-3204	460-3204
0.53mm	0.10	-20 to 260/280	415-5300	430-5300	460-5300
0.53mm	0.25	-20 to 260/280	415-5302	430-5302	460-5302
0.53mm	0.50	-20 to 260/280	415-5303	430-5303	460-5303
0.53mm	1.00	-20 to 260/280	415-5310	430-5310	460-5310
0.53mm	1.50	-20 to 260/280	415-5311	430-5311	460-5311



# OV-225

## 50% Cyanopropylmethyl, 50% Phenylmethylpolysiloxane

### Features:

Mid/High Polarity  
Bonded and Crosslinked  
Solvent Rinsable  
Equivalent to USP G7  
Low Bleed

### Applications:

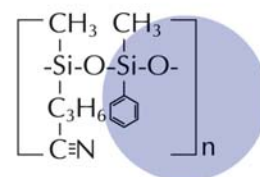
Fatty Acid Methyl Esters (FAME)  
PUFA  
Alditol  
Neutral Sterols

### Similar Phases:

007-225      HP-225  
BP-225      Rtx-225  
CP-Sil 43CB  
DB-225

ID	Film micron	Temperature Limit (Celsius)	15 Meter	30 Meter
0.25mm	0.10	40 to 220/240	715-2500	730-2500
0.25mm	0.15	40 to 220/240	715-2501	730-2501
0.25mm	0.25	40 to 220/240	715-2502	730-2502
0.25mm	0.50	40 to 220/240	715-2503	730-2503
0.32mm	0.10	40 to 220/240	715-3200	730-3200
0.32mm	0.15	40 to 220/240	715-3201	730-3201
0.32mm	0.25	40 to 220/240	715-3202	730-3202
0.32mm	0.50	40 to 220/240	715-3203	730-3203
0.53mm	0.10	40 to 200/220	715-5300	730-5300
0.53mm	0.25	40 to 200/220	715-5302	730-5302
0.53mm	0.50	40 to 200/220	715-5303	730-5303
0.53mm	1.00	40 to 200/220	715-5310	730-5310

ID	Film micron	Temperature Limit (Celsius)	15 Meter	30 Meter
0.45mm	0.85	40 to 200/220	715-4585	730-4585



# OV-624

## Designed for the Analysis of Priority Pollutants

### Features:

Bonded and Crosslinked  
Solvent Rinsable

### Applications:

EPA Method 502.2  
Volatile Organics

### Similar Phases:

007-624      HP-624  
AT-624      RTX-Volatiles  
CP-624      Rtx-502.2  
DB-624      VOCOL

ID	Film micron	Temperature Limit (Celsius)	30 Meter	60 Meter
0.25mm	1.4	-20 to 260	630-2514	660-2514
0.32mm	1.8	-20 to 260	630-3207	660-3207
0.53mm	3.0	-20 to 260	630-5307	

ID	Film micron	Temperature Limit (Celsius)	30 Meter
0.45mm	2.55	-20 to 260	630-4525

If you are looking for a special length, phase, ID, or film thickness not listed in this catalog, please contact our Sales Department at [info@imchem.fr](mailto:info@imchem.fr) or + 33 1 39 66 16 50 for a special quote.

# Carbowax 20M

## Polyethylene Glycol (PEG)

### Features:

High Polarity  
Bonded and Crosslinked  
Solvent Rinsable  
Equivalent to USP G16

### Applications:

Alcohols  
Aromatics  
Essential Oils  
Glycols  
Polar Solvents

### Similar Phases:

CP-Wax  
DB-Wax  
HP-Innowax  
PE-Wax  
Rtx-Wax



ID	Film micron	Temperature Limit (Celsius)	15 Meter	30 Meter	60 Meter
0.25mm	0.10	20 to 250/260	215-2500	230-2500	260-2500
0.25mm	0.15	20 to 250/260	215-2501	230-2501	260-2501
0.25mm	0.25	20 to 250/260	215-2502	230-2502	260-2502
0.25mm	0.50	20 to 250/260	215-2503	230-2503	260-2503
0.25mm	1.00	20 to 250/260	215-2504	230-2504	260-2504
0.32mm	0.10	20 to 250/260	215-3200	230-3200	260-3200
0.32mm	0.15	20 to 250/260	215-3201	230-3201	260-3201
0.32mm	0.25	20 to 250/260	215-3202	230-3202	260-3202
0.32mm	0.50	20 to 240/250	215-3203	230-3203	260-3203
0.32mm	1.00	20 to 230/240	215-3204	230-3204	260-3204
0.53mm	0.25	20 to 230/240	215-5302	230-5302	260-5302
0.53mm	0.50	20 to 230/240	215-5303	230-5303	260-5303
0.53mm	1.00	20 to 230/240	215-5310	230-5310	260-5310

# OV-351

## Nitroterephthalic Acid Modified PEG

### Features:

High Polarity  
Bonded and Crosslinked  
Solvent Rinsable  
Equivalent to USP G35

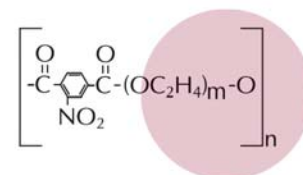
### Applications:

Underivatized Free Fatty  
Acids

### Similar Phases:

BP-21  
FFAP  
CP-FFAP  
DB-FFAP  
HP-FFAP  
PE-FFAP  
Nukol

ID	Film micron	Temperature Limit (Celsius)	15 Meter	30 Meter	60 Meter
0.25mm	0.10	40 to 250	315-2501	330-2501	360-2501
0.25mm	0.25	40 to 250	315-2502	330-2502	360-2502
0.25mm	0.50	40 to 250	315-2503	330-2503	360-2503
0.32mm	0.10	40 to 250	315-3201	330-3201	360-3201
0.32mm	0.25	40 to 250	315-3202	330-3202	360-3202
0.32mm	0.50	40 to 250	315-3203	330-3203	360-3203
0.32mm	1.00	40 to 250	315-3204	330-3204	360-3204
0.53mm	0.10	40 to 250	315-5301	330-5301	360-5301
0.53mm	0.25	40 to 250	315-5302	330-5302	360-5302
0.53mm	0.50	40 to 250	315-5303	330-5303	360-5303
0.53mm	1.00	40 to 250	315-5310	330-5310	360-5310
0.53mm	1.50	40 to 250	315-5311	330-5311	360-5311



# OV MICRO-PAK COLUMN

Micro-pak columns offer you an alternative to the traditional packed and capillary columns. With Micro-pak columns you can inject a larger sample as in packed columns but with the higher degree of efficiency that you experience with capillary columns. It's the best of both worlds.

Ohio Valley will custom make your Micro-pak column to your specifications. For added convenience these columns are offered in two different IDs. For packed column instruments you will want to use the 1.0 mm ID column. If you are using a capillary instrument you will need the 0.75 mm ID column.

All Micro-pak columns are supplied with brass fittings and Vespel/Graphite ferrules. Almost all custom Micro-pak columns are available in either 80/100 or 100/120 mesh. Ohio Valley can usually ship all custom columns within 24 hours.

## NOTE :

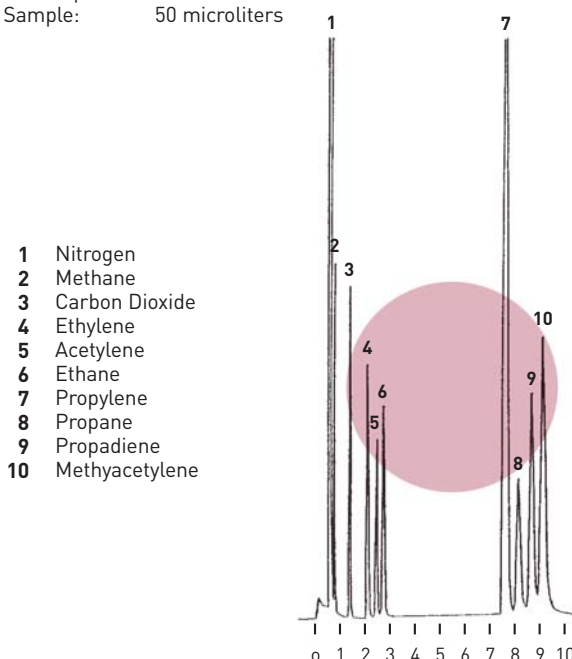
1. Add per column for stainless steel Swagelok fittings.
2. For mixed phases, add per phase. KOH and H3PO4 are considered phases.
3. Add for preconditioning.
4. Specify 1.0mm or 0.75mm ID.

Length of Column	Any packing except those listed at right	BMBT, BBBT, BEEA, OV-202 Poly-phases, Silar, Tenax, Porapak, OV-330, OV-275 HayeSep®, Chromosorb T	Porasil, Ultrabonds, Durapaks Graphpacs (Carbopacks) Dexsil, Pennwalt, OV-1701	Column Length In Meters
1' - 3'				0.3 - 1.0
4' - 6'				1.1 - 1.9
7' - 9'				2.0 - 2.9
10' - 12'				3.0 - 3.9
13' - 15'				4.0 - 4.9

All columns are 1/16" OD tubing and are available in 0.75 mm ID or 1.0 mm ID. (Please specify when ordering.)

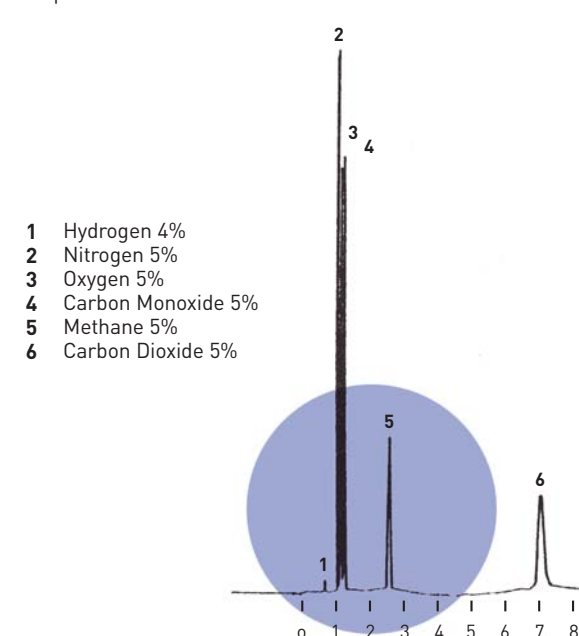
## Scott Mix 216 + MAPP Gas

Column: 10' x 1/16" x 1.0 mm Stainless Steel packed with HayeSep® S 100/120 mesh  
 Column Temp: 60°C 3 minutes up to 90°C at 8°C/min  
 Detector: P.E. 990 T.C.D. 225 ma  
 Flow: He 14 cc/min  
 Chart Speed: 1cm/min  
 Sample: 50 microliters



## Scott Mix 234

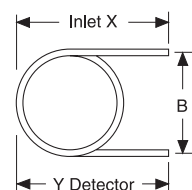
Column: 20' x 1/16" x 1.0 mm Stainless Steel packed with HayeSep® D 100/120 mesh  
 Column Temp: 25°C  
 Detector: P.E. 900 T.C.D. 225 ma 140°C, Att. x 4  
 Flow: 13.3 cc/min He  
 Chart Speed: 1cm/min  
 Sample: 25 microliters



# GLASS COLUMNS

## All Glass Columns are Silane Treated

SPECIAL PACKINGS	2mm	3mm/4mm
Apolane-87 packings	Add	ft
Carbopack/Graphpac		
Chromosorb Century Series	Add	ft
Deactigel	Add	ft
Dexsil packing	Add	ft
Durapaks, Ultrabond	Add	ft
Granular Carbon Mole Sieves		ft
OV-275, OV-330, OV-1701, packing	Add	ft
Pennwalt Amine packing	Add	ft
Poly, Poly MPE, Polyser	Add	ft
Porapaks, Porasils, HayeSep	Add	ft
Silar packings	Add	ft
Tenax	Add	ft
Double Coated packings	Add	
Stainless Steel nuts	Add	
Graphite/Polyimide Ferrules	Add	
Preconditioning	Add	



Key to Dimensions for Glass Columns  
Measure "B"  
(center to center)

To simplify ordering a packed column use the empty column catalog number and describe the packing.

Unless otherwise specified, all columns are 1/4" O.D. borosilicate glass and silane treated.

All packed columns are supplied with 1/4" brass swagelok nuts and high temperature flexible graphite ferrules.

At right you will find the "Key to Dimensions for Glass Columns." Please make measurements on the column you are replacing and choose a comparably sized column from the table.

- Stock – immediate shipment.
- Each column packaged in individual boxes for easy and safe storage.
- One piece construction (lengths 6 feet & under)
- Made to exact tolerances. Constant I.D. and length insure reproducible chromatograms from column to column.
- DMCS silane treated.
- Packed columns supplied with high temperature graphite ferrules.

Precise column length and precise I.D. guarantees improved reproducibility

## Superspec™

Variation in column length and I.D. can cause substantial variation in retention times for the same analysis. Different instrument manufacturer specifications for a typical 6 foot column may actually yield a column length that is longer or shorter than 6 feet. In addition, I.D. tolerances for glass tubing may also vary from lot to lot

and from one manufacturer to another. Superspec™ Metric Columns are a solution to this problem. Produced to a precise column length ( $\pm 1.5\%$ ) with an I.D. variation of ( $\pm 0.0025''$ ) for 2 mm I.D. and ( $\pm 0.005''$ ) for 4 mm I.D. columns, these columns are guaranteed to improve column to column reproducibility.

Configuration	X Y B	Instrument	L	Dimensions		Catalog number
				O.D.	I.D.	
	X=11.02"	Hewlett-Packard 5880, 5890,	2'	1/4"	2mm	220-022
	Y=9.05"	5987, 6890, Configuration "A"	2'	1/4"	4mm	220-024
	B=9"	9" Span	4'	1/4"	2mm	220-042
			4'	1/4"	4mm	220-044
			6'	1/4"	2mm	220-062
			6'	1/4"	4mm	220-064
			8'	1/4"	2mm	220-082
			10'	1/4"	2mm	220-102
			2.0m	1/4"	2mm	HP220-2.02
			2.0m	1/4"	4mm	HP220-2.04
	X=11.02"	Hewlett-Packard 5880	2'	1/4"	2mm	221-022
	Y=7.09"	Configuration "B"	6'	1/4"	2mm	221-062
	B=9"	TCD only	6'	1/4"	4mm	221-064









\* Empty glass columns are treated and supplied without fittings.

\*\* Price column – add any special packings and treatments charge if applicable (see above).

\*\*\* For column lengths that are not listed on chart refer to page 13.

# GLASS COLUMNS

All Glass Columns are Silane Treated

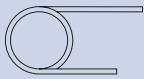

Configuration	X Y B	Instrument	Dimensions			Catalog number
			L	O.D.	I.D.	
	X=8 5/8"	Perkin-Elmer 115, 900, 990,	2'	1/4"	2mm	222-022
	Y=8 5/8"	F-30, 2000, 2100, 3920,	3'	1/4"	2mm	222-032
	B=8 3/4"	Sigma Series Not On-Column	3'	1/4"	4mm	222-034
		Injection	6'	1/4"	2mm	222-062
			6'	1/4"	4mm	222-064
			8'	1/4"	2mm	222-082
			10'	1/4"	2mm	222-102
			2.0m	1/4"	2mm	HP222-2.02
			2.0m	1/4"	4mm	HP222-2.04
	X=12 5/8"	Perkin-Elmer Sigma Series	3'	1/4"	2mm	223-032
	Y=7 1/8"	Heated On-Column Injection	6'	1/4"	2mm	223-062
	B=8 3/4"	Position "A" Only	6'	1/4"	4mm	223-064
			2.0m	1/4"	2mm	HP223-2.02
			2.0m	1/4"	4mm	HP223-2.04
			2.4m	1/4"	2mm	HP223-2.42
	X=6 13/16"	Perkin-Elmer	6'	1/4"	2mm	226-062
	Y=6 13/16"	8300, 8400, 8500,	6'	1/4"	4mm	226-064
	B=6 1/2"	8600, 8700 Series,	10'	1/4"	2mm	226-102
		Autosystem	10'	1/4"	4mm	226-104
		Not On-Column	2.0m	1/4"	2mm	HP226-2.02
		Injection	2.0m	1/4"	4mm	HP226-2.04
	X=12"	Perkin-Elmer	6'	1/4"	2mm	227-062
	Y=6 3/16"	8300, 8400, 8500,	6'	1/4"	4mm	227-064
	B=6 1/2"	8600, 8700 Series	10'	1/4"	2mm	227-102
		On-Column	10'	1/4"	4mm	227-104
		Injection	2.0m	1/4"	2mm	HP227-2.02
			2.0m	1/4"	4mm	HP227-2.04
	X=355mm	Shimadzu GC-4BM, 4CM,	1.7m	5mm	3mm	284-1.7M3
	Y=282mm	4MG, GC-6A, 6AM, GC-7AG,	2.5m	5mm	3mm	284-2.5M3
	B=40mm"	7A, 9A, GC-R1A, 14A, 15A, 16A				
	X=190mm	Shimadzu Mini-GC	3'	5mm	3mm	285-033
	Y=142mm		6'	5mm	3mm	285-063
	B=120mm					
	X=229mm	Shimadzu GC-8A	1.5m	5mm	3mm	286-1.5M3
	Y=229mm	81F	2.0m	5mm	3mm	286-2.0M3
	B=152mm		3.0m	5mm	3mm	286-3.0M3
	X=8"	Tracor 540, 560, 565, 570	3'	1/4"	2mm	233-032
	Y=8"		6'	1/4"	2mm	233-062
	B=6"		6'	1/4"	4mm	233-064
			8'	1/4"	2mm	233-082
			10'	1/4"	2mm	233-102
			2.0m	1/4"	2mm	HP233-2.02
			2.0m	1/4"	4mm	HP233-2.04
			2.4m	1/4"	2mm	HP233-2.42

\* Empty glass columns are treated and supplied without fittings.

\*\* Price column – add any special packings and treatments charge if applicable (page 11).

\*\*\* For column lengths that are not listed on chart refer to page 13.

At right you will find the "Key to Dimensions for Glass Columns." Please make measurements on the column you are replacing and choose a comparably sized column from the table.

Configuration	X Y B	Instrument	L	Dimensions		Catalog number
				O.D.	I.D.	
	X=9 5/16"	Varian 3700, 4400, 4600, 6000	2'	1/4"	2mm	248-022
	Y=8"	Vista Series FID, ECD, TSD	3'	1/4"	2mm	248-032
	B=5 1/2"		3'	1/4"	4mm	248-034
			4'	1/4"	2mm	248-042
			6'	1/4"	2mm	248-062
			6'	1/4"	4mm	248-064
			8'	1/4"	2mm	248-082
			10'	1/4"	2mm	248-102
			10'	1/4"	4mm	248-104
			2.0m	1/4"	2mm	HP248-2.02
			2.0m	1/4"	4mm	HP248-2.04
		2.4m	1/4"	2mm	HP248-2.42	
	X=9 1/2"	Varian 3800	6'	1/4"	2mm	250-062
	Y=5 1/2"		6'	1/4"	4mm	250-064
	B=5 1/2"					
	X=9 1/4"	Varian Universal	6'	1/4"	2mm	252-062
	Y=5 7/8"	3000, 3300, 3400, 3600, 3700,	6'	1/4"	4mm	252-064
	B=9"	4400, 4600, 6000, Vista Series				

\* Empty glass columns are treated and supplied without fittings.

\*\* Price column – add any special packings and treatments charge if applicable (page 11).

\*\*\* For column lengths that are not listed on chart refer to page 13.

**If you cannot find the column you need listed in our Glass Column section (pages 11-13), please contact our Sales Department at [info@imchem.fr](mailto:info@imchem.fr) or + 33 1 39 66 16 50 for a special quote.**



# CUSTOM-MADE PACKED COLUMNS

Our custom-made OV-Packed columns 100% Satisfaction Guarantee!

- 36 years experience in packing preparation and column techniques.
- Fast delivery.
- Complete with brass Swagelok fittings.
- All stainless steel tubing is our premium grade, manufactured for GC use only.
- Each column packed in individual container. (No lost ferrules or end caps)
- OV's guide to packings and columns included.

Orders for custom-made columns will be given immediate attention and most will be shipped very fast from receipt of order. We can supply packed columns made with any combination of support and liquid phase listed in this catalog. We will also make every effort to supply your requirements for other supports or liquid phases.

## To Order, Please Specify :

- 1 Type of tubing, length and O.D.
- 2 Stationary phase and concentration.
- 3 Solid support and mesh size.
- 4 Chromatograph make and model.
- 5 Diagram number
- 6 Dimensions corresponding to each letter in the diagram.
- 7 Beware of mirror image. Specify mirror image if necessary.

## Ordering Example :

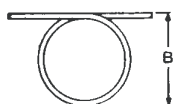
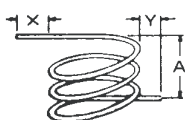
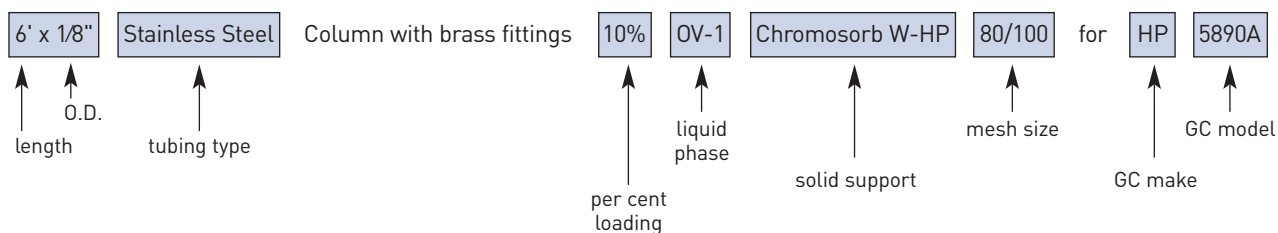


DIAGRAM 1†

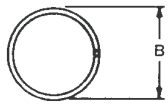
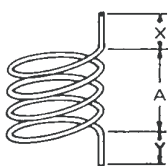


DIAGRAM 2

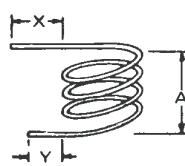


DIAGRAM 3†

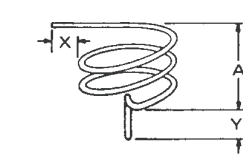


DIAGRAM 4†

†Beware of mirror image. Specify mirror image if necessary.

# CUSTOM-MADE PACKED COLUMNS

## STAINLESS STEEL, COPPER, ALUMINUM, NICKEL\*, and TEFLON\* COLUMNS

LENGTH OF COLUMN (FEET)	BMBT, BBBT, BEEA, OV-202, HayaSep Poly-phases, Tenax, Porapak, Chromosorb T, Silar, OV-330, OV-275		Porasil, Ultrabonds, Durapaks, Graphpacs (Carbopacks), Dexsil, Pennwalt, OV-1701		LENGTH OF COLUMN (METERS)
	Any packing except those listed at right	1/8" O.D. Tubing	3/16" or 1/4" O.D. Tubing	1/8" O.D. Tubing	
1 - 3					0.3 - 1.0
4 - 6					1.1 - 1.9
7 - 9					2.0 - 2.9
10 - 12					3.0 - 3.9
13 - 15					4.0 - 4.9
16 - 18					5.0 - 5.9
19 - 21					6.0 - 6.5
22 - 24					6.6 - 7.5
25 - 27					7.6 - 8.4
28 - 30					8.5 - 9.1
31 - 33					9.2 - 9.8
34 - 36					9.9 - 10.4

\*Add for Nickel or Teflon Columns



### NOTE :

- 1 Add per column for stainless steel Swagelok fittings.
- 2 For mixed phases, add per phase. KOH and H3PO4 are considered phases.
- 3 Special quote for columns over 36 feet, and for any length teflon lined stainless steel.
- 4 Empty columns cost each plus per foot. Supplied with brass Swageloks.
- 5 Add for Nickel or Teflon Columns.
- 6 Any Special Phase not listed in the Special Packing Table (above) and whose retail cost is greater than the cost/g are subject to special quotations.
- 7 Add for preconditioning.

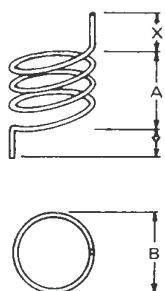


DIAGRAM 5

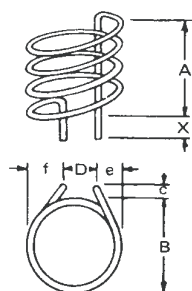


DIAGRAM 6

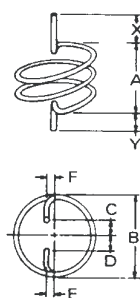


DIAGRAM 7

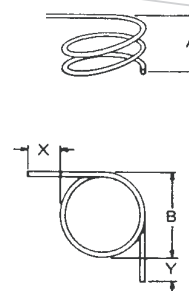


DIAGRAM 8†

†Beware of mirror image. Specify mirror image if necessary.

# NOTES

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A series of horizontal dashed lines for writing notes, spanning the width of the page.

