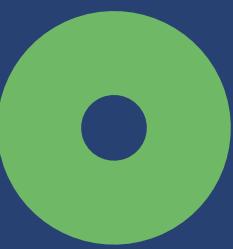
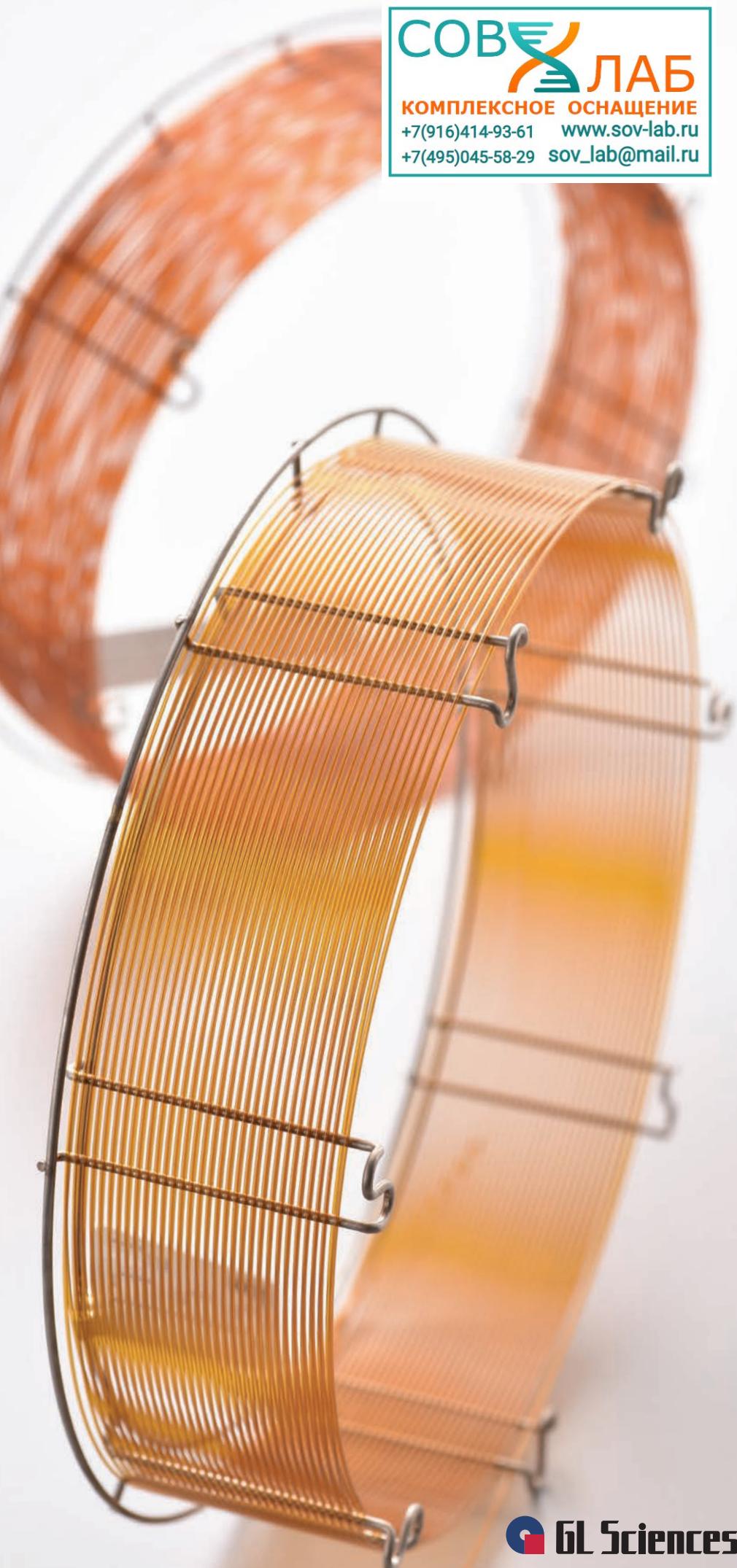


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GC•GC/MS Columns

General Catalog



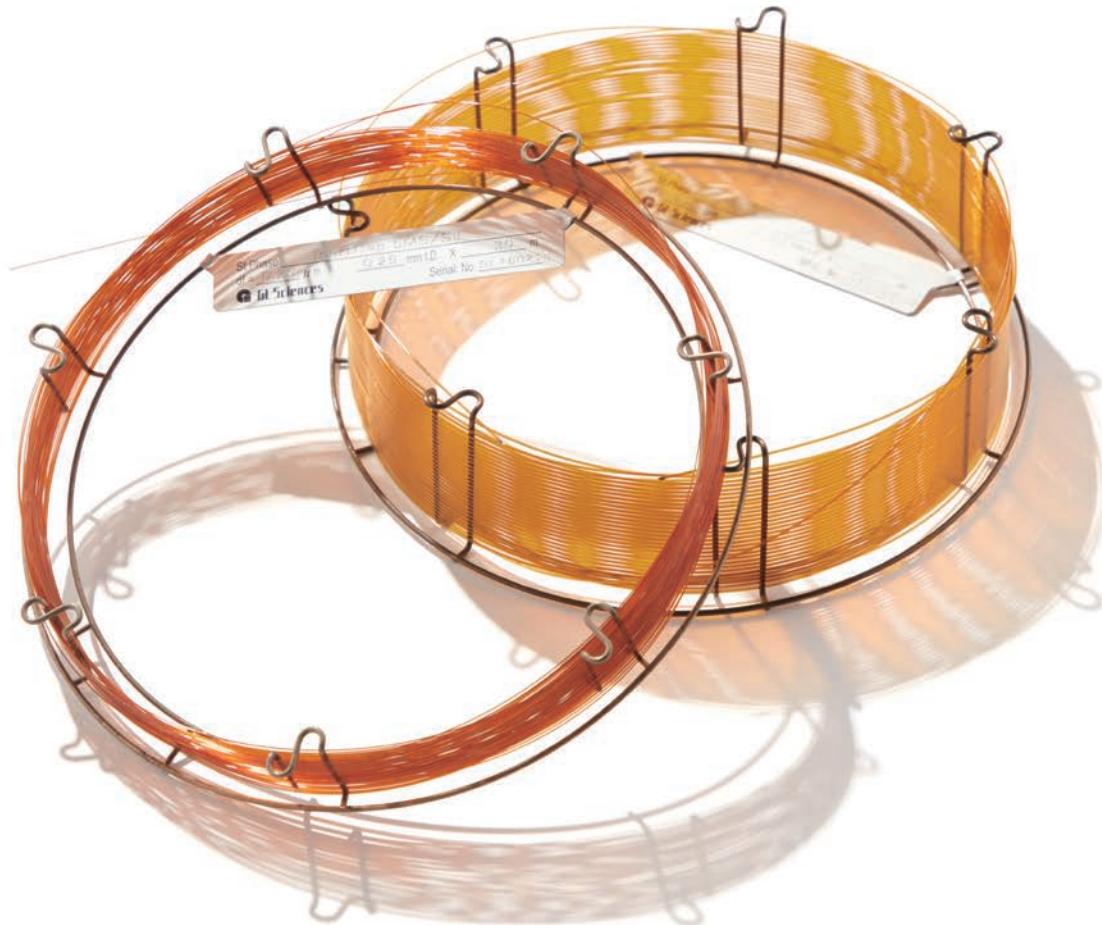
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 GL Sciences

■ High Inertness & Ultra-low Bleed Delivery from Japan.

GC·GC/MS Capillary Columns

InertCap



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Operation Information of GC Capillary Columns

■ Column Installation Procedure

1. Uncoil the ends of the column long enough to reach the injector and detector.
2. Slide the nut and ferrule onto the inlet end of the column and cut 1 cm from the end of the column using a recommended cutters such as a capillary fine cutter or ceramic tube cutter. To cut a column clean and square is extremely important because cracked column walls or column blockage result in poor chromatography.
3. Refer to the GC Capillary instruction manual for the insertion length of the inlet end into the injection port.
4. Set the pressure of carrier gas and make sure that the flow rate is proper and there is no leak. Linear carrier gas velocity is approx. 30 cm/sec (He). For setting the head pressure, refer to the table below (internal injection port pressure). The column head pressure differs depending on the type of GC and carrier gas.

Relationship Between Column and Head Pressure

Length / I.D.	0.18 mm I.D.	0.25 mm I.D.	0.32 mm I.D.	0.53 mm I.D.
20 m	150 kPa (1.5 bar, 21.8 psi)	–	–	–
30 m	–	100 kPa (1.0 bar, 14.5 psi)	70 kPa (0.7 bar, 10.2 psi)	20 kPa (0.2 bar, 2.9 psi)
60 m	–	200 kPa (2.0 bar, 29.0 psi)	140 kPa (1.4 bar, 20.3 psi)	50 kPa (0.5 bar, 7.2 psi)

5. The installation procedure of the outlet end is the same as for the inlet end. Slide the nut and ferrule onto the outlet end of the column and cut 1 cm from the end of column using a cutter. Connect the end as described in instruction manual. When conditioning the column, disconnect the outlet end from the detector to prevent contamination.

To check for gas leaks, use the leak detector LD239 (Cat. No. 2702-19340). Do not use soap solution such as snoop for high sensitivity analysis as it may cause contamination of the entire system.

■ Column Conditioning

1. Verify the carrier gas is at the rate you intend. Replace the gas purification tube (moisture, oxygen and for organic matter removal) as necessary.
2. Don't connect the capillary column to the detector.
3. Purge the column with carrier gas for more than 20 minutes at room temperature and set a temperature programing rate of 5 to 10 °C/minute varying with stationary phase described below. Be aware that it may result in unwilling performance if the column is heated with insufficient purge.
4. Program the oven either to 10 °C higher than the final temperature required in the analysis or to the isothermal Max. Temperature whichever is lower. After the oven temperature reaches the final set point, hold this temperature for 1 to 2 hours varying with stationary phase described below.

On Silicone Stationary Phase

Temperature programing rate: 10 °C/minute

Holding Time at the Final Temperature: 2 hours

On Wax Stationary Phase

Temperature programing rate: 5 °C/minute

Holding Time at 100 °C 30 minutes (For dehydration)

Holding Time at the Final Temperature: 2 hours

5. After the conditioning completed, connect the column to the detector. After resetting to the analysis initial temperature, the baseline gradually decreases for approx. 10 minutes. Then the baseline stabilizes, and the analysis can be started.

■ Features

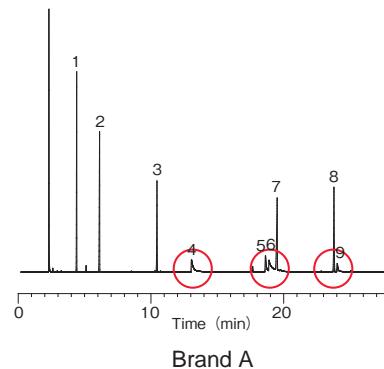
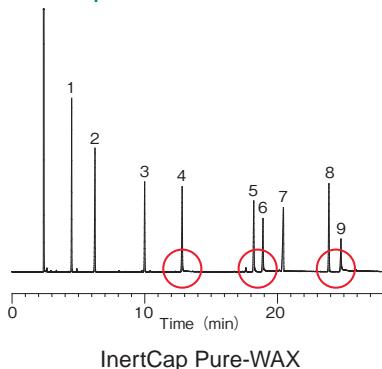
High Inertness

Inertness is one of the most difficult attributes to achieve in an analytical column. GL Sciences' proprietary inert processing technology completely eliminates residues of metal, halide and silanol which are in the column's inner surface. It is possible to obtain excellent symmetry peaks for polar, basic, acidic compounds and metal ligands.

Comparison of High-Adsorptive Samples

System : GC/FID
 Column : 0.25 mm I.D. x 30 m df = 0.25 μ m
 Col. Temp. : 60 °C - 4 °C/min - 250 °C
 Injection : 250 °C
 Detection : 250 °C
 Sample Size : 0.1 mg/mL in methanol 0.2 μ L

1. n-Undecane
2. n-Dodecane
3. 4,6-Dimethylpyrimidine
4. 1-Amino octane
5. N,N-Dicyclohexylamide
6. 1-Aminodecane
7. n-Heptadecane
8. 2,6-Dimethylaniline
9. 1-Aminododecane



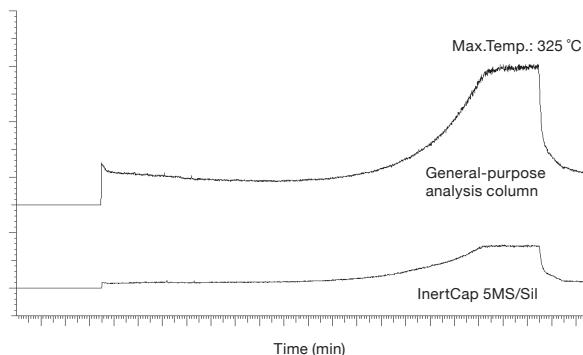
Ultra-Low Bleed

In GC/MS analysis, it is important to select a low bleed column that has little baseline rise to improve the S/N ratio and detection limit, also to prevent contamination in the MS detector.

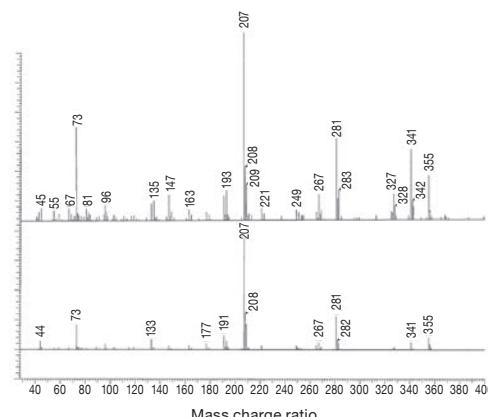
The increased baseline is caused when the siloxane (Si-O) liquid phase is decomposed by high temperature into cyclic siloxane; which can be seen in the MS spectrum as m/z 207.

Based on superior technologies for cross-linking of stationary phases and surface deactivation of fused silica InertCap columns for GC/MS analysis offers technologies, with ultra-low bleed.

Column Bleed Comparison



Spectrum Intensity Comparison



■ Quality Assurance

InertCap Capillary columns are manufactured and shipped under strict quality control at the GL Science factory, Japan, in accordance with ISO9001 quality certification. InertCap is tested by standard samples which includes high adsorption compounds.

Inspection Report

To achieve the highest quality assurance standards, all columns are tested for quality. The inspection report includes theoretical plate number (N) and coating efficiency (CE), to ensure optimal separation and stable quality.

Also, to guarantee the specific performance of some products, a test chromatogram reporting the separation and adsorption of related standard components is included.

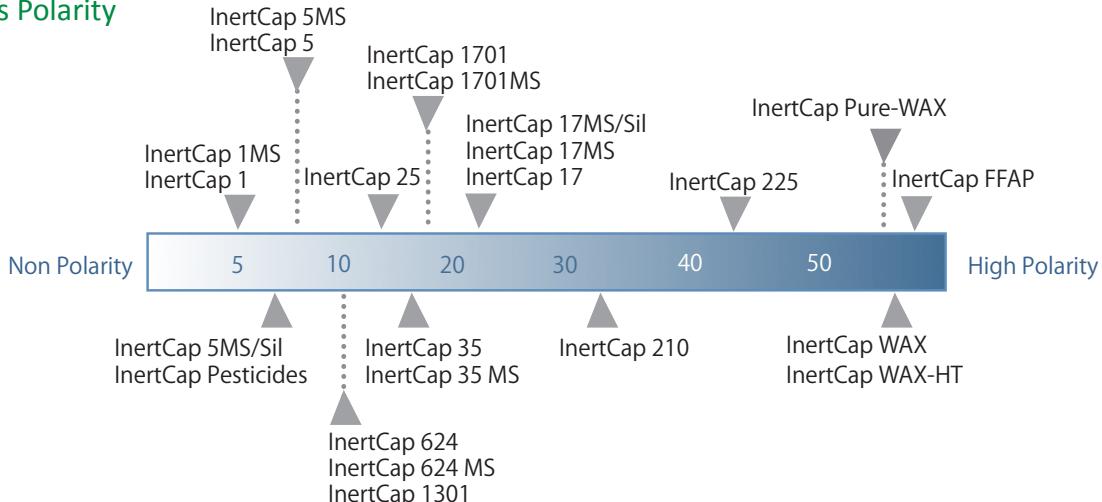
InertCap Series

Lineup

InertCap Product Line

Phase	Phase Composition	USP Code	Polarity	Application
InertCap 1MS	100 % Dimethylpolysiloxane	G1, G2, G38	None	General purpose, Hydrocarbons, PCBs, High Volatile solvents, Phenols
InertCap 1	100 % Dimethylpolysiloxane	G1, G2, G38	None	General purpose, Hydrocarbons, PCBs, High Volatile solvents, Phenols
InertCap 5MS/Sil	5 % Diphenyl (equiv.) - Dimethylpolysilphenylene siloxane	G27, G36	Low	General purpose, Halogenated compounds, Phenols, Pesticides, FAME
InertCap 5MS	5 % Diphenyl 95 % Dimethylpolysiloxane	G27, G36	Low	General purpose, Halogenated compounds, Phenols, Pesticides, FAME
InertCap 5	5 % Diphenyl 95 % Dimethylpolysiloxane	G27, G36	Low	General purpose, Halogenated compounds, Phenols, Pesticides, FAME
InertCap 624MS	6 % Cyanopropylphenyl 94 % Dimethylpolysiloxane	G43	Medium	Residual solvents of Pharmaceuticals, VOCs, Alcohols
InertCap 624	6 % Cyanopropylphenyl 94 % Dimethylpolysiloxane	G43	Medium	VOCs, Alcohols
InertCap 1301	6 % Cyanopropylphenyl 94 % Dimethylpolysiloxane	G43	Medium	Pesticides, PCBs, Alcohols, VOCs
InertCap 25	25 % Diphenyl 75 % Dimethylpolysiloxane	G28	Medium	Pesticides, PCBs, Alcohols, VOCs
InertCap 35MS	35 % Diphenyl 65 % Dimethylpolysiloxane	G42	Medium	Pesticides, Pharmaceuticals, Polycyclic aromatics
InertCap 35	35 % Diphenyl 65 % Dimethylpolysiloxane	G42	Medium	Pesticides, Pharmaceuticals
InertCap 1701MS	14 % Cyanopropylphenyl 86 % Dimethylpolysiloxane	G46	Medium	Pesticides, Sugar, TMS derivatives, Drugs, Alcohols. Steroids
InertCap 1701	14 % Cyanopropylphenyl 86 % Dimethylpolysiloxane	G46	Medium	Pesticides, Sugar, TMS derivatives, Drugs, Alcohols. Steroids
InertCap 17MS/Sil	50 % Diphenyl(equiv.) - 50 % Dimethylsilphenylene Siloxane	G3	Medium	Pesticides
InertCap 17MS	50 % Diphenyl 50 % Dimethylpolysiloxane	G3	Medium	Steroids, Drugs, Pesticides
InertCap 17	50 % Diphenyl 50 % Dimethylpolysiloxane	G3	Medium	Steroids, Drugs, Pesticides
InertCap 210	50 % Trifluoropropyl 50 % Methylpolysiloxane	G6	Medium	Organophosphorus acids
InertCap 225	50 % Cyanopropylmethyl 50 % Phenylmethylpolysiloxane	G7, G19	Medium to high	FAME
InertCap Pure-WAX	Polyethylene Glycol	G14, G15, G16, G20, G39, G47	High	General purpose, Esters, Perfumes, Alcohols, Aromatic hydrocarbons, FAME
InertCap WAX	Polyethylene Glycol	G14, G15, G16, G20, G39, G47	High	General purpose, Esters, Perfumes, Alcohols, Aromatic hydrocarbons, FAME
InertCap WAX-HT	Polyethylene Glycol	G14, G15, G16, G20, G39, G47	High	General purpose, Esters, Perfumes, Alcohols, Aromatic hydrocarbons, FAME
InertCap FFAP	Nitrotetraphthalic acid modified Polyethylene Glycol	G25, G35	High	FAME, Free fatty acids, Organic acids, Alcohols, Aldehydes

Columns Polarity



■ Column Cross Reference

Phase	Phase Composition	Agilent	Agilent (Varian)	Agilent (Chrompack)	Restek	Merck (Supelco)
InertCap 1MS	100 % Dimethylpolysiloxane	DB-1 ms HP-1 ms	VF-1 ms	CP-Sil 5 CB Low Bleed/MS	Rxi-1MS	Equity-1
InertCap 1	100 % Dimethylpolysiloxane	DB-1, HP-1 ULTRA-1	-	CP-Sil 5 CB	Rtx-1	SPB-1
InertCap 5MS/Sil	5 % Diphenyl (equiv.) - Dimethylpolysilphenylene siloxane	DB-5 ms	VF-5 ms	CP-Sil 8 CB Low Bleed/MS	Rxi-5Sil MS	SLB-5 ms
InertCap 5MS	5 % Diphenyl 95 % Dimethylpolysiloxane	HP-5 ms	-	-	Rxi-5MS Rtx-5MS	Equity-5
InertCap 5	5 % Diphenyl 95 % Dimethylpolysiloxane	DB-5, HP-5 ULTRA-2	-	CP-Sil 8 CB	Rtx-5	SPB-5
InertCap 624MS	6 % Cyanopropylphenyl 94 % Dimethylpolysiloxane	-	VF-624 ms	-	Rxi-624Sil MS	-
InertCap 624	6 % Cyanopropylphenyl 94 % Dimethylpolysiloxane	DB-624 HP-VOC	-	CP-Select 624 CB	Rtx-624	-
InertCap 1301	6 % Cyanopropylphenyl 94 % Dimethylpolysiloxane	DB-1301 HP-1301	VF-1301 ms	CP-1301	Rtx-1301	SPB-1301
InertCap 25	25 % Diphenyl 75 % Dimethylpolysiloxane	-	-	-	-	-
InertCap 35MS	35 % Diphenyl(equiv.) 65 % Dimethylpolysiloxane	DB-35ms UI	VF-35 ms	-	Rxi-35Sil MS	-
InertCap 35	35 % Diphenyl 65 % Dimethylpolysiloxane	DB-35 HP-35	-	-	Rtx-35	SPB-35
InertCap 1701MS	14 % Cyanopropylphenyl 86 % Dimethylpolysiloxane	-	VF-1701 ms	-	-	-
InertCap 1701	14 % Cyanopropylphenyl 86 % Dimethylpolysiloxane	DB-1701	-	CP-Sil 19 CB	Rtx-1701	SPB-1701
InertCap 17MS/Sil	50 % Diphenyl(equiv.) - 50 % Dimethylsilphenylene Siloxane	DB-17 ms	VF-17 ms	-	Rxi-17Sil MS	-
InertCap 17MS	50 % Diphenyl 50 % Dimethylpolysiloxane	DB-17 ms	VF-17 ms	CP-Sil 24 CB Low Bleed/MS	Rxi-17Sil MS	-
InertCap 17	50 % Diphenyl 50 % Dimethylpolysiloxane	DB-17 HP-50+	-	CP-Sil 24 CB	Rxi-17 Rtx-50	SPB-50
InertCap 210	50 % Trifluoropropyl 50 % Methylpolysiloxane	DB-210 DB-200	VF-200 ms	-	Rtx-200	-
InertCap 225	50 % Cyanopropylmethyl 50 % Phenylmethylpolysiloxane	DB-225	-	CP-Sil 43 CB	Rtx-225	-
InertCap Pure-WAX	Polyethylene Glycol (PEG)	DB-WAX HP-INNOWax	-	CP-WAX 52 CB	Rtx-Wax Stabilwax	SUPELCOWAX-10
InertCap WAX	Polyethylene Glycol (PEG)	DB-WAX HP-INNOWax	-	CP-WAX 52 CB	Rtx-Wax Stabilwax	SUPELCOWAX-10
InertCap WAX-HT	Polyethylene Glycol (PEG)	DB-WAXetr	VF-WAXms	CP-WAX 52 CB	-	SUPELCOWAX-10
InertCap FFAP	Nitrotetraphthalic acid modified Polyethylene Glycol	DB-FFAP HP-FFAP	-	CP-WAX 58 CB	-	Stabilwax-DA
InertCap Pesticides	5 % Diphenyl (equiv.) - Dimethylpolysilphenylene siloxane	-	-	-	-	-
InertCap AQUATIC	25 % Diphenyl 75 % Dimethylpolysiloxane	-	-	-	-	-
InertCap AQUATIC-2	25 % Diphenyl 75 % Dimethylpolysiloxane	-	-	-	-	-
InertCap for Amines	GL Sciences Original	-	-	-	-	-
InertCap CHIRAMIX	GL Sciences Original	-	-	-	-	-

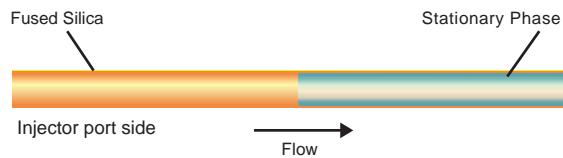
Application Specific Columns

Phase	Phase Composition	USP Code	Polarity	Application
InertCap Pesticides	5 % Diphenyl (equiv.) - Dimethylpolysilphenylene siloxane	G27	Low	Multi component screening of pesticides
InertCap for Amines	GL Sciences original	-	-	Amines, Alcohols
InertCap CHIRAMIX	GL Sciences original	-	-	Optical isomers
InertCap AQUATIC	25 % Phenyl 75 % Methylpolysiloxane	G28	Medium	VOCs, 1,4-dioxane, Organic solvents
InertCap AQUATIC-2	25 % Phenyl 75 % Methylpolysiloxane	G28	Medium	VOCs, Organic solvents

InertCap Series

■ InertCap ProGuard - Build-in Guard Column

Guard columns and retention gaps are used widely in gas chromatography. Both are short (1-10 m) piece of uncoated deactivated fused silica tubing which are placed in-line between the GC injection port and the analytical capillary column. Guard column is to protect the analytical column from contamination, not allowing nonvolatile materials to reach the analytical column. Retention gap is to help focus the compounds in large volume injected from the inlet to a small band at the head of the analytical column. InertCap ProGuard is a "guard column built-in" analytical capillary column without the connection for such purposes. For this reason, now there is no need to worry about leakage and compounds adsorption.

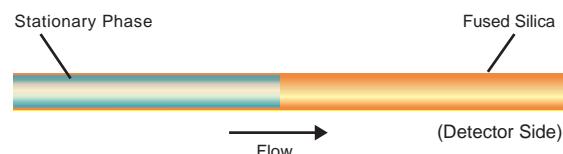


InertCap ProGuard

Phase (column)	I.D.	Length	Thickness	Guard column Length	Max. Temperature	Cat.No.
InertCap 1MS	0.25 mm	30 m	0.25 µm	2 m	iso.325-prog.350 °C	1010-12172
				5 m		1010-12173
				10 m		1010-12174
InertCap 1	0.25 mm	30 m	0.25 µm	2 m	iso.325-prog.350 °C	1010-11172
				5 m		1010-11173
				10 m		1010-11174
InertCap 5MS/Sil	0.25 mm	30 m	0.25 µm	2 m	iso.325-prog.350 °C	1010-15172
				5 m		1010-15173
				10 m		1010-15174
InertCap 5MS	0.25 mm	30 m	0.25 µm	2 m	iso.325-prog.350 °C	1010-18941
				5 m		1010-18942
				10 m		1010-18943
InertCap 5	0.25 mm	30 m	0.25 µm	2 m	iso.325-prog.350 °C	1010-18172
				5 m		1010-18173
				10 m		1010-18174
InertCap Pesticides	0.25 mm	30 m	0.2 µm	2 m	iso.325-prog.350 °C	1010-15175
				5 m		1010-15176
				10 m		1010-15177
InertCap Pure-WAX	0.25 mm	30 m	0.25 µm	2 m	iso.260-prog.260 °C	1010-68490
				5 m		1010-68491
				10 m		1010-68494

■ InertCap T.L. - Built-in Transfer Line

Transfer lines are widely used for connecting interface of GC chromatography and MS. InertCap T.L. is a "transfer line built-in" analytical capillary column without connectors. Transfer line prevents degradation of stationary phase and keeps it low bleed. Additionally, transfer line is inert to transfer samples with no adsorption. Therefore there is no need to worry about leakage and compound adsorption.



InertCap T.L.

Phase (column)	I.D.	Length	Thickness	Transfer Line Length	Max. Temperature	Cat.No.
InertCap 1MS	0.25 mm	30 m	0.25 µm	2 m	iso.325-prog.350 °C	1010-12192
InertCap 5MS/Sil	0.25 mm	30 m	0.25 µm	2 m	iso.325-prog.350 °C	1010-15192
InertCap Pesticides	0.25 mm	30 m	0.20 µm	2 m	iso.325-prog.350 °C	1010-15191
InertCap Pure-WAX	0.25 mm	30 m	0.25 µm	2 m	iso.260-prog.260 °C	1010-68492
	0.25 mm	60 m	0.25 µm	2 m	iso.260-prog.260 °C	1010-68493

Applications and Method Guides

■ Japanese Pharmacopeia

Target Compounds	Phase	Column Dimension	Recommend Column Cat.No.
Acetohexamide	InertCap 1	0.53 mm I.D. x 30 m df = 1.50 µm	1010-11446
Ethanol Dehydrated Ethanol Ethanol for Disinfection	InertCap 624 Note: If necessary, identify suitable analysis conditions with stationary phase which is different from polarity of benzene.	0.32 mm I.D. x 30 m df = 1.80 µm	1010-14747
Epirubicin Hydrochloride	InertCap WAX InertCap Pure-WAX	0.53 mm I.D. x 30 m df = 1.00 µm 0.53 mm I.D. x 30 m df = 1.00 µm	1010-67445 1010-68445
Glycerol Concentrated Glycerin	InertCap 1701	0.32 mm I.D. x 30 m df = 1.00 µm	1010-61245
Wood Creosote Purity test of Coal Creosote	InertCap 5 InertCap 5MS InertCap 5MS/Sil	0.25 mm I.D. x 30 m df = 0.25 µm 0.25 mm I.D. x 30 m df = 0.25 µm 0.25 mm I.D. x 30 m df = 0.25 µm	1010-18142 1010-18642 1010-15142
Wood Creosote Purity test of Acenaphthene	InertCap 1	0.25 mm I.D. x 60 m df = 0.25 µm 0.25 mm I.D. x 60 m df = 0.40 µm	1010-11162 1010-11163
Colchicine	InertCap Pure-WAX	0.53 mm I.D. x 30 m df = 1.00 µm	1010-68445
Magnesium Stearate	InertCap WAX-HT InertCap Pure-WAX InertCap WAX	0.32 mm I.D. x 30 m df = 0.50 µm 0.32 mm I.D. x 30 m df = 0.50 µm 0.32 mm I.D. x 30 m df = 0.50 µm	1010-68644 1010-68244 1010-67244
Sevoflurane	InertCap 624	0.32 mm I.D. x 30 m df = 1.80 µm	1010-14747
Teceluekin (Gene Recombination)	G-300	1.20 mm I.D. x 40 m df = 1.00 µm	On request
Panipenem	G-950	1.20 mm I.D. x 40 m df = 25 µm	On request
Benzyl Alcohol	InertCap Pure-WAX InertCap WAX	0.32 mm I.D. x 30 m df = 0.50 µm 0.32 mm I.D. x 30 m df = 0.50 µm	1010-68244 1010-67244
Labetalol Hydrochloride	InertCap 1	0.53 mm I.D. x 30 m df = 5.00 µm	1010-11449
Iohexol (Supplement I to the Japanese Pharmacopoeia,16th Edition)	InertCap 5	0.25 mm I.D. x 30 m df = 0.25 µm	1010-18142
Clomiphene Citrate (Supplement I to the Japanese Pharmacopoeia,16th Edition)	InertCap 1	0.25 mm I.D. x 15 m df = 0.10 µm	1010-11120
Anhydrous Lactose (Supplement I to the Japanese Pharmacopoeia,16th Edition)	InertCap 5 Medium polar deactivated fused silica tube	0.25 mm I.D. x 15 m df = 0.25 µm 0.53 mm I.D. x 2 m	1010-18122 1010-36782
Bupivacaine Hydrochloride Hydrate (Supplement I to the Japanese Pharmacopoeia,16th Edition)	InertCap 5	0.32 mm I.D. x 30 m df = 0.25 µm	1010-18242
Lenograstim (Gene Recombination) (Supplement I to the Japanese Pharmacopoeia,16th Edition)	InertCap 1701	0.25 mm I.D. x 30 m df = 0.25 µm	1010-61142

5.01 Crude Drugs Test

Description (Japanese Pharmacopoeia,16th Edition)	Application Column	Dimension	Cat.No.
Polygala root, polygala root powder, Licorice, Licorice powder, Chinese Cinnamon, Chinese Cinnamon powder, Red Ginseng, Asiasarum Root, Cornus Fruit, Senna Leaf, Senna Leaf Powder, Perilla Herb, Jujube, Citrus Unshiu Peel, Carrot, Carrot Powder, Eriobotryae Folium, Moutan Bark, Moutan Bark Powder.	InertCap 1701	0.32 mm I.D. x 30 m df = 0.25 µm 0.32 mm I.D. x 30 m df = 0.50 µm 0.32 mm I.D. x 30 m df = 1.00 µm	1010-61242 1010-61244 1010-61245

Applications and Method Guides

■ Japanese Pharmacopeia

9.41 Reagents and Test Solutions

Description (Japanese Pharmacopoeia, 16th Edition)	Phase	Column Dimensions	Cat.No.
α -BHC (α -hexachlorocyclohexane)	InertCap 1701	0.32 mm I.D. x 30 m df = 0.25 μ m 0.32 mm I.D. x 30 m df = 0.50 μ m 0.32 mm I.D. x 30 m df = 1.00 μ m	1010-61242 1010-61244 1010-61245
P,P' -DDD(2,2-bis (4-chlorophenyl)-1, 1-dichloroethane)	InertCap 1701	0.32 mm I.D. x 30 m df = 0.25 μ m 0.32 mm I.D. x 30 m df = 0.50 μ m 0.32 mm I.D. x 30 m df = 1.00 μ m	1010-61242 1010-61244 1010-61245
Guaiacol, for quantitative determination	InertCap 1	0.25 mm I.D. x 60 m df = 0.25 μ m 0.25 mm I.D. x 60 m df = 0.40 μ m	1010-11162 1010-11163
Diethyl Ether, for purity test of Crude Drugs	InertCap 1701	0.32 mm I.D. x 30 m df = 0.25 μ m 0.32 mm I.D. x 30 m df = 0.50 μ m 0.32 mm I.D. x 30 m df = 1.00 μ m	1010-61242 1010-61244 1010-61245
Dibenz[a,h] anthracene	InertCap 5 InertCap 5MS InertCap 5MS/Sil	0.25 mm I.D. x 30 m df = 0.25 μ m 0.25 mm I.D. x 30 m df = 0.25 μ m 0.25 mm I.D. x 30 m df = 0.25 μ m	1010-18142 1010-18642 1010-15142
<i>N,N</i> -dimethylacetamide	InertCap Pure-WAX InertCap WAX	0.25 mm I.D. x 30 m df = 0.50 μ m 0.25 mm I.D. x 30 m df = 0.50 μ m	1010-68144 1010-67144
Cilastatinammonium, for quantitative determination	InertCap 5	0.53 mm I.D. x 30 m df = 5.00 μ m	1010-18449
1-vinyl-2-Pyrrolidone	InertCap Pure-WAX InertCap WAX InertCap WAX-HT	0.53 mm I.D. x 30 m df = 1.00 μ m 0.53 mm I.D. x 30 m df = 1.00 μ m 0.53 mm I.D. x 30 m df = 1.00 μ m	1010-68445 1010-67445 1010-68745
Hexane, for purity test of Crude Drugs	InertCap 1701	0.32 mm I.D. x 30 m df = 0.25 μ m 0.32 mm I.D. x 30 m df = 0.50 μ m 0.32 mm I.D. x 30 m df = 1.00 μ m	1010-61242 1010-61244 1010-61245
Benz[a] anthracene	InertCap 5 InertCap 5MS InertCap 5MS/Sil	0.25 mm I.D. x 30 m df = 0.25 μ m 0.25 mm I.D. x 30 m df = 0.25 μ m 0.25 mm I.D. x 30 m df = 0.25 μ m	1010-18142 1010-18642 1010-15142
Benzo[a] Pyrene	InertCap 5 InertCap 5MS InertCap 5MS/Sil	0.25 mm I.D. x 30 m df = 0.25 μ m 0.25 mm I.D. x 30 m df = 0.25 μ m 0.25 mm I.D. x 30 m df = 0.25 μ m	1010-18142 1010-18642 1010-15142
2-methoxy-4- methylphenol	InertCap 1	0.25 mm I.D. x 60 m df = 0.25 μ m 0.25 mm I.D. x 60 m df = 0.40 μ m	1010-11162 1010-11163
3-chloro-1, 2-propanediol (Supplement I to the Japanese Pharmacopoeia,16th Edition)	InertCap 5	0.25 mm I.D. x 30 m df = 0.25 μ m	1010-18142
Ethyl formate (Supplement I to the Japanese Pharmacopoeia,16th Edition)	InertCap Pure-WAX InertCap WAX InertCap WAX-HT	0.25 mm I.D. x 30 m df = 0.25 μ m 0.25 mm I.D. x 30 m df = 0.25 μ m 0.25 mm I.D. x 30 m df = 0.25 μ m	1010-68142 1010-67142 1010-68542

Applications and Method Guides

■ United States Pharmacopeia (USP) GC Phases

USP	Phase Composition	GL Phase		
G1	Dimethylpolysiloxane oil	InertCap 1MS	InertCap 1	
G2	Dimethylpolysiloxane gum	InertCap 1MS	InertCap 1	
G3	50 % Phenyl - 50 % methylpolysiloxane	InertCap 17MS/Sil	InertCap 17MS	InertCap 17
G6	Trifluoropropylmethyl polysiloxane	InertCap 210		
G7	50 % 3-Cyanopropyl - 50 % phenylmethylsilicone	InertCap 225		
G14	Polyethylene glycol(av.mot.wt.of 950 to 1050)	InertCap Pure-WAX	InertCap WAX	InertCap WAX-HT
G15	Polyethylene glycol(av.mot.wt.of 3000 to 3700)	InertCap Pure-WAX	InertCap WAX	InertCap WAX-HT
G16	Polyethylene glycol compound(av.mot.wt.about 15,000). A high molecular weight compound of with a diepoxide linker Polyethylene glycol	InertCap Pure-WAX	InertCap WAX	InertCap WAX-HT
G19	25 % Phenyl - 25 % cyanopropyl - 50 % methylsilicone	InertCap 225		
G20	Polyethylene glycol(av.mot.wt.of 380 to 420)	InertCap Pure-WAX	InertCap WAX	InertCap WAX-HT
G25	Polyethylene glycol compound TPA. A high molecular weight compound of polyethylene glycol and diepoxide that is esterified with terephthalic acid. Available commercially as Carbowax 20M-TPA from suppliers of chromatographic reagents.	InertCap FFAP		
G27	5 % Phenyl - 95 % methylpolysiloxane	InertCap 5MS/Sil	InertCap 5MS	InertCap 5
G28	25 % Phenyl - 75 % methylpolysiloxane	InertCap 25	InertCap AQUATIC	InertCap AQUATIC-2
G35	A high molecular weight compound of a polyethylene glycol and a diepoxide that is esterified with nitroterephthalic acid.	InertCap FFAP		
G36	1 % Vinyl - 5 % phenylmethylpolysiloxane	InertCap 5MS/Sil	InertCap 5MS	InertCap 5
G38	Phase G1 containing a small percentage of a tailing inhibitor	InertCap 1MS	InertCap 1	
G39	Polyethylene glycol(av.mol.wt.of about 1500)	InertCap Pure-WAX	InertCap WAX	InertCap WAX-HT
G42	35 % phenyl-65 % dimethylpolysiloxane(percentage refer to molar substitution)	InertCap 35MS	InertCap 35	
G43	6 % cyanopropylphenyl-94 % dimethylpolysiloxane	InertCap 624	InertCap 1301	
G46	14 % Cyanopropylphenyl - 86 % methylpolysiloxane	InertCap 1701MS	InertCap 1701	
G47	Polyethylene glycol(av.mol.wt.of about 8000)	InertCap Pure-WAX	InertCap WAX	InertCap WAX-HT

Applications and Method Guides

EPA Method

Method	Applications	Phase	Column Dimensions	Cat.No.
501.3	Measurement of trihalomethanes in drinking water	InertCap 624	0.53 mm I.D. x 30 m df = 3.00 µm	1010-14948
502.2	Volatile organic compounds(VOC) in water	InertCap 624	0.53 mm I.D. x 30 m df = 3.00 µm	1010-14948
504.1	1,2-Dibromoethane (EDB), 1,2-Dibromo-3-chloropropane (DBCP),and 1,2,3-Trichloropropene (123TCP)	InertCap 1	0.32 mm I.D. x 30 m df = 1.00 µm	1010-11245
505	Organohalide pesticides	InertCap 1 InertCap 5	0.32 mm I.D. x 30 m df = 1.00 µm 0.25 mm I.D. x 30 m df = 1.00 µm	1010-11245 1010-18145
506	Determination of phthalate and adipate esters	InertCap 1 InertCap 5	0.32 mm I.D. x 30 m df = 0.25 µm 0.32 mm I.D. x 30 m df = 0.25 µm	1010-11242 1010-18242
507	Determination of nitrogen- and phosphorus-containing pesticides in water	InertCap 5MS/Sil InertCap 1701	0.25 mm I.D. x 30 m df = 0.25 µm 0.53 mm I.D. x 30 m df = 1.00 µm	1010-15142 1010-61445
508.1	Organochlorine pesticides and PCBs	InertCap 5MS/Sil InertCap 5 InertCap 1701	0.25 mm I.D. x 30 m df = 0.25 µm 0.25 mm I.D. x 30 m df = 0.25 µm 0.25 mm I.D. x 30 m df = 0.25 µm	1010-15142 1010-18142 1010-61142
515	Determination of chlorinated acids in water	InertCap 5	0.25 mm I.D. x 30 m df = 0.25 µm	1010-18142
515.2	Determination of chlorinated acids in water	InertCap 1701	0.25 mm I.D. x 30 m df = 0.25 µm	1010-61142
515.3	Determination of chlorinated acids in drinking water by liquid-liquid extraction, derivatization and gas chromatography with electron capture detection	InertCap 1701	0.25 mm I.D. x 30 m df = 0.25 µm	1010-61142
515.4	Determination of chlorinated acids in water by liquid-liquid microextraction, derivatization, and fast gas chromatography with electron capture detection	InertCap 1701	0.32 mm I.D. x 30 m df = 0.25 µm	1010-61242
524.2	Measurement of purgeable organic compounds in water by capillary column gas chromatography/mass spectrometry (GC/MS)	InertCap 624	0.53 mm I.D. x 30 m df = 3.00 µm 0.53 mm I.D. x 75 m df = 3.00 µm	1010-14948 1010-14978
525.2	Determination of organic compounds in drinking water	InertCap 5MS/Sil	0.25 mm I.D. x 30 m df = 0.25 µm	1010-15142
526	Determination of selected semivolatile organic compounds in drinking water by solid phase extraction and capillary column gas chromatography/ mass spectrometry (GC/MS)	InertCap 5MS/Sil	0.25 mm I.D. x 30 m df = 0.25 µm	1010-15142
527	Determination of selected pesticides and flame retardants in drinking water by solid phase extraction and capillary column gas chromatography/ mass spectrometry (GC/MS)	InertCap 5MS/Sil	0.25 mm I.D. x 30 m df = 0.25 µm	1010-15142
528	Determination of phenols in drinking water by solid phase extraction and capillary column gas chromatography/mass spectrometry (GC/MS)	InertCap 5MS/Sil	0.25 mm I.D. x 30 m df = 0.25 µm	1010-15142
529	Determination of phenols in drinking water by solid phase extraction and capillary column gas chromatography/mass spectrometry (GC/MS)	InertCap 5MS/Sil	0.25 mm I.D. x 15 m df = 0.25 µm	1010-15122
551	Determination of chlorination disinfection byproducts, chlorinated solvents, and halogenated pesticides, herbicides in drinking water	InertCap 5	0.25 mm I.D. x 30 m df = 1.00 µm	1010-18145
551.1	Chlorinated solvents & disinfection by-products	InertCap 1MS InertCap 1301	0.25 mm I.D. x 30 m df = 1.00 µm 0.25 mm I.D. x 30 m df = 1.00 µm	1010-12145 1010-60145
552	Haloacetic acids	InertCap 5 InertCap 1701	0.25 mm I.D. x 30 m df = 0.25 µm 0.25 mm I.D. x 30 m df = 0.25 µm	1010-18142 1010-61142
556	Determination of carbonyl compounds in drinking water by pentafluorobenzylhydroxylamine derivatization and capillary gas chromatography with electron capture detection	InertCap 1701	0.25 mm I.D. x 30 m df = 0.25 µm	1010-61142
556.1	Determination of carbonyl compounds in drinking water by fast gas chromatography	InertCap 5MS/Sil InertCap 1701	0.10 mm I.D. x 10 m df = 0.10 µm 0.10 mm I.D. x 10 m df = 0.10 µm	Contact Us Contact Us
601	Purgeable halocarbons	InertCap 624	0.53 mm I.D. x 30 m df = 1.00 µm 0.53 mm I.D. x 30 m df = 3.00 µm	Contact Us 1010-14948
602	Purgeable aromatics	InertCap 624	0.53 mm I.D. x 30 m df = 1.00 µm 0.53 mm I.D. x 30 m df = 3.00 µm	Contact Us 1010-14948
603	Acrolein and acrylonitrile	InertCap 624	0.25 mm I.D. x 30 m df = 1.00 µm 0.53 mm I.D. x 30 m df = 3.00 µm	Contact Us 1010-14948
604/605	Phenols & benzidines	InertCap 5MS/Sil	0.25 mm I.D. x 30 m df = 0.25 µm	1010-15142
606	Phthalate esters	InertCap 5MS/Sil	0.25 mm I.D. x 30 m df = 0.25 µm	1010-15142
607	Nitrosamines	InertCap 5MS/Sil	0.25 mm I.D. x 30 m df = 0.50 µm	1010-15144

Applications and Method Guides

EPA Method

Method	Applications	Phase	Column Dimensions	Cat.No.
609	Nitroaromatics and isophorone	InertCap 5MS/Sil	0.25 mm I.D. x 30 m df = 0.50 µm	1010-15144
610	Polycyclic aromatic hydrocarbons	InertCap 5MS/Sil	0.32 mm I.D. x 30 m df = 0.10 µm 0.32 mm I.D. x 30 m df = 0.25 µm	1010-15240 1010-15242
611	Haloethers	InertCap 5MS/Sil	0.25 mm I.D. x 30 m df = 0.50 µm	1010-15144
612	Chlorinated hydrocarbons	InertCap 5MS/Sil	0.25 mm I.D. x 30 m df = 0.10 µm 0.25 mm I.D. x 60 m df = 0.10 µm 0.32 mm I.D. x 30 m df = 1.00 µm	1010-15140 1010-15160 1010-15245
615	Chlorinated pesticides	InertCap 1701	0.25 mm I.D. x 30 m df = 0.25 µm 0.53 mm I.D. x 30 m df = 1.00 µm	1010-61142 1010-61445
619	Triazine herbicides	InertCap 17	0.25 mm I.D. x 30 m df = 0.50 µm 0.53 mm I.D. x 30 m df = 1.00 µm	Contact Us 1010-65445
624	Purgeables	InertCap 624	0.25 mm I.D. x 30 m df = 1.40 µm 0.53 mm I.D. x 30 m df = 3.00 µm	1010-14646 1010-14948
625	Semi volatile organic compounds	InertCap 5MS/Sil	0.32 mm I.D. x 30 m df = 0.25 µm	1010-15242
680	Pesticides and PCBs in water and soil/sediment	InertCap 1MS InertCap 5MS/Sil	0.32 mm I.D. x 30 m df = 0.25 µm 0.32 mm I.D. x 30 m df = 0.25 µm	1010-12242 1010-15242
1624	Volatile organic compounds by isotope dilution GC/MS	InertCap 624	0.25 mm I.D. x 30 m df = 1.40 µm 0.53 mm I.D. x 30 m df = 3.00 µm	1010-14646 1010-14948
1625	Semivolatile organic compounds by isotope dilution	InertCap 5MS/Sil	0.25 mm I.D. x 30 m df = 0.25 µm	1010-15142
1653	Chlorinated phenols in waste water by in-situ MS acylation and GC low bleed/MS	InertCap 5MS/Sil	0.25 mm I.D. x 30 m df = 0.25 µm 0.32 mm I.D. x 30 m df = 0.25 µm	1010-15142 1010-15242
8010	Halogenated volatile organics	InertCap 624	0.25 mm I.D. x 30 m df = 1.40 µm	1010-14646
8011	1,2-dibromoethane and 1,2-dibromo-3-chloropropane	InertCap 1	0.32 mm I.D. x 30 m df = 0.25 µm	1010-11242
8015	Non-halogenated volatile organics	InertCap 624	0.25 mm I.D. x 30 m df = 1.40 µm 0.53 mm I.D. x 30 m df = 3.00 µm	1010-14646 1010-14948
8021	Aromatic volatile organics	InertCap 624	0.25 mm I.D. x 30 m df = 1.40 µm 0.53 mm I.D. x 30 m df = 3.00 µm	1010-14646 1010-14948
8030/8031	Acrolein, acrylonitrile, acetonitrile	InertCap 624	0.25 mm I.D. x 30 m df = 1.40 µm 0.53 mm I.D. x 30 m df = 3.00 µm	1010-14646 1010-14948
8040/8041	Phenols	InertCap 5	0.25 mm I.D. x 30 m df = 0.25 µm 0.53 mm I.D. x 30 m df = 1.50 µm	1010-18142 1010-18446
8061	Determination of phthalate and adipate esters	InertCap 5 InertCap 1701	0.53 mm I.D. x 30 m df = 1.50 µm 0.53 mm I.D. x 30 m df = 1.00 µm	1010-18446 1010-61445
8080	Organochlorine pesticides and PCBs	InertCap 1 InertCap 5MS/Sil	0.53 mm I.D. x 30 m df = 1.50 µm 0.25 mm I.D. x 30 m df = 0.50 µm	1010-11446 1010-15144
8081/8082	Organochlorine pesticides and PCBs as Arochlor	InertCap 5 InertCap 1701	0.53 mm I.D. x 30 m df = 1.50 µm 0.53 mm I.D. x 30 m df = 1.00 µm	1010-18446 1010-61445
8090/8091	Nitroaromatics and cyclic ketones	InertCap 5MS/Sil InertCap 5	0.25 mm I.D. x 30 m df = 0.50 µm 0.53 mm I.D. x 30 m df = 1.50 µm	1010-15144 1010-18446
8100	Polynuclear aromatic hydrocarbons	InertCap 5MS/Sil	0.32 mm I.D. x 30 m df = 0.25 µm	1010-15242
8120/8121	Chlorinated hydrocarbons	InertCap 1MS	0.32 mm I.D. x 30 m df = 1.00 µm	1010-12245
8140	Organophosphorus pesticides	InertCap 1MS InertCap 1 InertCap 1701	0.25 mm I.D. x 30 m df = 0.25 µm 0.53 mm I.D. x 30 m df = 1.50 µm 0.53 mm I.D. x 30 m df = 1.00 µm	1010-12142 1010-11446 1010-61445
8141	Organophosphorus compounds	InertCap 5MS/Sil InertCap 5	0.25 mm I.D. x 15 m df = 0.25 µm 0.53 mm I.D. x 15 m df = 1.50 µm	1010-15122 1010-18426
8150/8151	Chlorinated herbicides	InertCap 5MS/Sil InertCap 1701	0.25 mm I.D. x 30 m df = 0.50 µm 0.53 mm I.D. x 30 m df = 1.00 µm	1010-15144 1010-61445
8240	Volatile organic compounds	InertCap 624	0.25 mm I.D. x 30 m df = 1.00 µm 0.53 mm I.D. x 30 m df = 3.00 µm	Contact Us 1010-14948
8250	Semi-volatile organic compounds	InertCap 5MS/Sil	0.25 mm I.D. x 30 m df = 0.50 µm	1010-15144
8260	Volatile organic compounds	InertCap 624	0.32 mm I.D. x 60 m df = 1.80 µm 0.53 mm I.D. x 75 m df = 3.00 µm	1010-14767 1010-14978
8270	Semi volatile organic compounds(SVOC)	InertCap 5	0.25 mm I.D. x 30 m df = 1.00 µm	1010-18145
8280	Analysis of polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans	InertCap 5MS/Sil	0.25 mm I.D. x 30 m df = 0.25 µm 0.25 mm I.D. x 60 m df = 0.10 µm	1010-15142 1010-15160

Applications and Method Guides

EPA Method

Method	Applications	Phase	Column Dimensions	Cat.No.
D 1983	Fatty acid	InertCap Pure-WAX InertCap WAX	0.25 mm I.D. x 30 m df = 0.25 µm	1010-68142 1010-67142
D 2268	Analysis of n-heptane and iso-octane (high purity)	InertCap 1	0.25 mm I.D. x 60 m df = 0.50 µm	1010-11164
D 2306	Xylene isomer	InertCap Pure-WAX InertCap WAX	0.25 mm I.D. x 60 m df = 0.25 µm	1010-68162 1010-67162
D 2426	Butadiene and styrene in butadiene concentrates	InertCap 1	0.53 mm I.D. x 30 m df = 5.00 µm	1010-11449
D 2427	C2-C5 hydrocarbons in gasolines	InertCap 1	0.53 mm I.D. x 30 m df = 5.00 µm	1010-11449
D 2580	Phenols in water	InertCap 5MS/Sil	0.32 mm I.D. x 25 m df = 0.40 µm	Contact Us
D 2804	Purity of methyl ethyl ketone	InertCap Pure-WAX InertCap WAX	0.53 mm I.D. x 30 m df = 1.00 µm	1010-68445 1010-67445
D 2908	Volatile organics compounds(VOC) in water	InertCap 624 InertCap Pure-WAX	0.32 mm I.D. x 30 m df = 1.80 µm 0.32 mm I.D. x 30 m df = 0.50 µm	1010-14747 1010-68244
D 2998	Polyhydric alcohols	InertCap 1	0.32 mm I.D. x 30 m df = 1.00 µm	1010-11245
D 2999	Monopentaerythritol in commercial pentaerythritol	InertCap 1	0.53 mm I.D. x 30 m df = 1.50 µm	1010-11446
D 3009	Composition of turpentine	InertCap Pure-WAX InertCap WAX	0.32 mm I.D. x 30 m df = 0.50 µm	1010-68244 1010-67244
D 3168	Polymers in emulsion paints	InertCap 1	0.32 mm I.D. x 30 m df = 1.00 µm	1010-11245
D 3257	Aromatics in mineral spirits	InertCap 624	0.53 mm I.D. x 30 m df = 3.00 µm	1010-14948
D 3329	Purity of methyl isobutyl ketone	InertCap Pure-WAX InertCap WAX	0.53 mm I.D. x 30 m df = 1.00 µm	1010-68445 1010-67445
D 3432	Toluene diisocyanates in urethane prepolymers	InertCap 1	0.32 mm I.D. x 30 m df = 1.00 µm	1010-11245
D 3447	Purity of halogenated organic solvents	InertCap 1	0.53 mm I.D. x 60 m df = 5.00 µm	1010-11469
D 3452	Identification of rubber	InertCap 1	0.53 mm I.D. x 30 m df = 1.50 µm	1010-11446
D 3606	Benzene and toluene in gasoline	InertCap 1	0.25 mm I.D. x 15 m df = 0.10 µm	1010-11120
D 3687	Volatile organic compounds vapors(VOC)	InertCap Pure-WAX InertCap WAX	0.32 mm I.D. x 30 m df = 0.50 µm	1010-68244 1010-67244
D 3695	Volatile alcohols in water	InertCap Pure-WAX InertCap WAX	0.53 mm I.D. x 30 m df = 1.00 µm	1010-68445 1010-67445
D 3725	Fatty acids in drying oils	InertCap FFAP	0.53 mm I.D. x 30 m df = 1.00 µm	1010-28945
D 3760	Analysis of cumene	InertCap Pure-WAX InertCap WAX	0.32 mm I.D. x 60 m df = 0.25 µm	1010-68262 1010-67262
D 3797	Analysis of <i>o</i> -xylene	InertCap Pure-WAX InertCap WAX	0.32 mm I.D. x 60 m df = 0.50 µm	1010-68264 1010-67264
D 3798	Analysis of <i>p</i> -xylene impurities	InertCap Pure-WAX InertCap WAX	0.32 mm I.D. x 60 m df = 0.50 µm	1010-68264 1010-67264

Applications and Method Guides

EPA Method

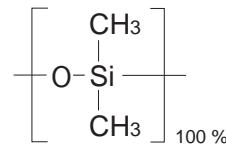
Method	Applications	Phase	Column Dimensions	Cat.No.
D 3876	Methoxyl and hydroxypropyl substitution in cellulose ether products	InertCap 1	0.32 mm I.D. x 30 m df = 1.00 µm	1010-11245
D 3962	Impurities in styrene	InertCap FFAP	0.53 mm I.D. x 30 m df = 1.00 µm	1010-28945
D 4367	Benzene in hydrocarbon solvent	InertCap 1	0.25 mm I.D. x 15 m df = 0.10 µm	1010-11120
D 4420	Aromatics compounds in gasoline	InertCap 1	0.25 mm I.D. x 15 m df = 0.10 µm	1010-11120
D 4735	Thiophene impurities in benzene	InertCap FFAP	0.53 mm I.D. x 30 m df = 1.00 µm	1010-28945
D 4768	Phenol and cresol inhibitors in insulating oils	InertCap FFAP	0.53 mm I.D. x 30 m df = 1.00 µm	1010-28945
D 4864	Methanol in propylene concentrates	InertCap Pure-WAX InertCap WAX	0.53 mm I.D. x 30 m df = 1.00 µm	1010-68445 1010-67445
D 4947	Chlordane and heptachlor residues in indoor air	InertCap 5	0.53 mm I.D. x 30 m df = 1.50 µm	1010-18446
D 5060	Impurities in ethylbenzene	InertCap Pure-WAX InertCap FFAP	0.32 mm I.D. x 60 m df = 0.50 µm	1010-68264 1010-28764
D 5075	Nicotine and 3-ethenylpyridine in indoor air	InertCap 5	0.53 mm I.D. x 30 m df = 1.50 µm	1010-18446
D 5135-35	Analysis of styrene	InertCap Pure-WAX InertCap WAX	0.32 mm I.D. x 60 m df = 0.50 µm	1010-68264 1010-67264
D 5310	Tar acid composition	InertCap 5MS/Sil	0.25 mm I.D. x 30 m df = 0.25 µm	1010-15142
D 5320	Determination of 1,1,1-trichloroethane and methylene chloride content in stabilized trichloroethylene and tetrachloroethylene	InertCap 1	0.53 mm I.D. x 30 m df = 3.00 µm	1010-11448
D 5442	Analysis of petroleum waxes	InertCap 1	0.32 mm I.D. x 30 m df = 0.25 µm	1010-11242
D 5580	Aromatics in finished gasoline	InertCap 1	0.53 mm I.D. x 30 m df = 5.00 µm	1010-11449
D 5599	Determination of oxygenates in gasoline	InertCap 1	0.25 mm I.D. x 60 m df = 1.00 µm	1010-11165
D 5769	Determination of benzene, toluene, and total aromatics in finished gasolines	InertCap 1	0.25 mm I.D. x 60 m df = 1.00 µm	1010-11165
D 5812	Determination of organochlorine pesticides in water	InertCap 5MS/Sil	0.25 mm I.D. x 30 m df = 0.25 µm	1010-15142
D 6160	Determination of polychlorinated biphenyls (PCBs) in waste materials	InertCap 5MS/Sil	0.25 mm I.D. x 30 m df = 0.25 µm	1010-15142

InertCap 1MS

InertCap 1MS

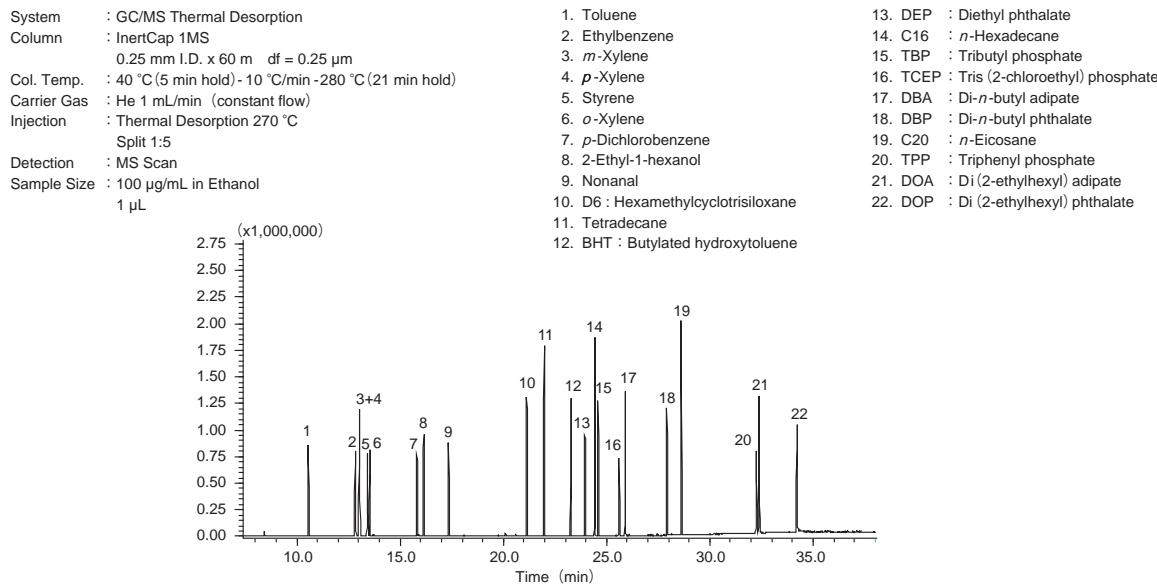
- 100 % Dimethylpolysiloxane
- USP Phase G2
- Non-Polarity
- Cross-Linked
- Ultra Low Bleed
- Equivalents : DB-1ms, HP-1ms, Rxi-1ms, VF-1ms, Equity-1

Structure



InertCap 1MS is a non-polar column bonded 100 % Dimethylpolysiloxane. Samples elute in order of low boiling points. Designed for GC/MS, InertCap 1MS realizes the world highest inertness and ultra low bleed.

Automobile Interior Material Analysis



InertCap 1MS

I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.25 mm	15 m	0.25 μm	iso.325-prog.350 °C	1010-12122
		0.10 μm	iso.325-prog.350 °C	1010-12140
	30 m	0.25 μm	iso.325-prog.350 °C	1010-12142
		1.00 μm	iso.300-prog.320 °C	1010-12145
0.32 mm	60 m	0.25 μm	iso.325-prog.350 °C	1010-12162
		1.00 μm	iso.300-prog.320 °C	1010-12165
	15 m	0.25 μm	iso.325-prog.350 °C	1010-12222
	30 m	0.25 μm	iso.325-prog.350 °C	1010-12242
	1.00 μm	iso.300-prog.320 °C	1010-12245	
	60 m	0.25 μm	iso.325-prog.350 °C	1010-12262
		1.00 μm	iso.300-prog.320 °C	1010-12265

InertCap 1MS ProGuard (Built-in Guard Column)

I.D.	Length	Thickness	Guard Column Length	Max. Temperature	Cat.No.
0.25 mm	30 m	0.25 μm	2 m	iso.325-prog.350 °C	1010-12172
			5 m	iso.325-prog.350 °C	1010-12173
			10 m	iso.325-prog.350 °C	1010-12174

InertCap 1MS T.L. (Built-in Transfer Line)

I.D.	Length	Thickness	Transfer Line Length	Max. Temperature	Cat.No.
0.25 mm	30 m	0.25 μm	2 m	iso.325-prog.350 °C	1010-12192

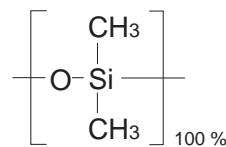
InertCap 1MS Fast GC

I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.18 mm	20 m	0.18 μm	iso.325-prog.350 °C	1010-12031

InertCap 1

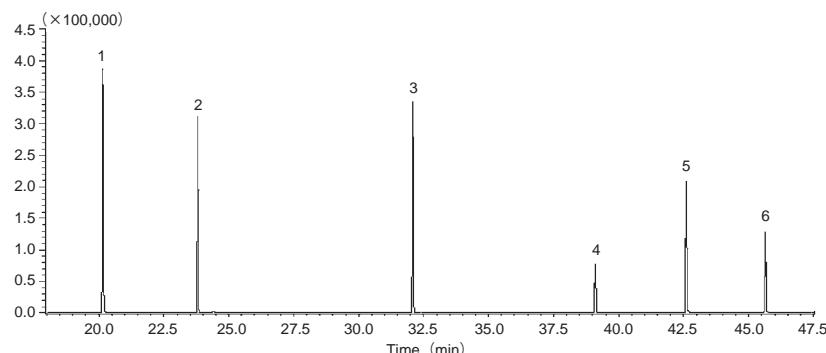
- 100 % Dimethylpolysiloxane
- USP Phase G2
- Non-Polarity
- Cross-Linked
- Equivalents : DB-1, HP-1, Rtx-1, CP-Sil 5CB, SPB-1, BP-1

Structure



InertCap 1 is a non-polar column bonded 100 % dimethylpolysiloxane. Compounds elute in order of increasing boiling point.
InertCap 1 has broad utility and can be used for a variety of general analyses.

Phthalate



System	: GC/MS
Column	: InertCap 1
	0.25 mm I.D. x 30 m df = 0.25 µm
Col. Temp.	: 60 °C (3 min hold) - 5 °C/min - 280 °C (3 min hold)
Injection	: Splitless 280 °C
Detection	: MS SIM
Sample Size	: 1 µL
1.	Dimethylphthalate
2.	Diethylphthalate
3.	Di-n-butylphthalate
4.	Butylbenzylphthalate
5.	Di(2-ethylhexyl)phthalate
6.	DiOctylphthalate

InertCap 1

I.D.	Length	Thickness	Max. Temperature	Cat.No.	I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.25 mm	15 m	0.10 µm	iso.325-prog.350 °C	1010-11120	0.32 mm	30 m	0.25 µm	iso.325-prog.350 °C	1010-11242
		0.25 µm	iso.325-prog.350 °C	1010-11122			0.40 µm	iso.325-prog.350 °C	1010-11243
		0.40 µm	iso.325-prog.350 °C	1010-11123			0.50 µm	iso.325-prog.350 °C	1010-11244
		0.50 µm	iso.325-prog.350 °C	1010-11124			1.00 µm	iso.300-prog.320 °C	1010-11245
		5.00 µm	iso.260-prog.300 °C	1010-11129			5.00 µm	iso.260-prog.300 °C	1010-11249
	30 m	0.10 µm	iso.325-prog.350 °C	1010-11140		60 m	0.25 µm	iso.325-prog.350 °C	1010-11262
		0.25 µm	iso.325-prog.350 °C	1010-11142			0.40 µm	iso.325-prog.350 °C	1010-11263
		0.40 µm	iso.325-prog.350 °C	1010-11143			0.50 µm	iso.325-prog.350 °C	1010-11264
		0.50 µm	iso.325-prog.350 °C	1010-11144			1.00 µm	iso.300-prog.320 °C	1010-11265
		1.00 µm	iso.300-prog.320 °C	1010-11145			5.00 µm	iso.260-prog.300 °C	1010-11269
		1.50 µm	iso.300-prog.320 °C	1010-11146		15 m	1.00 µm	iso.300-prog.320 °C	1010-11425
		5.00 µm	iso.260-prog.300 °C	1010-11149			1.50 µm	iso.300-prog.320 °C	1010-11426
	60 m	0.25 µm	iso.325-prog.350 °C	1010-11162			2.00 µm	iso.300-prog.320 °C	1010-11427
		0.40 µm	iso.325-prog.350 °C	1010-11163			3.00 µm	iso.260-prog.280 °C	1010-11428
		0.50 µm	iso.325-prog.350 °C	1010-11164			5.00 µm	iso.260-prog.280 °C	1010-11429
		1.00 µm	iso.300-prog.320 °C	1010-11165		30 m	1.00 µm	iso.300-prog.320 °C	1010-11445
		1.50 µm	iso.300-prog.320 °C	1010-11166			1.50 µm	iso.300-prog.320 °C	1010-11446
0.32 mm	15 m	0.25 µm	iso.325-prog.350 °C	1010-11222			2.00 µm	iso.300-prog.320 °C	1010-11447
		0.40 µm	iso.325-prog.350 °C	1010-11223			3.00 µm	iso.260-prog.280 °C	1010-11448
		5.00 µm	iso.260-prog.300 °C	1010-11229			5.00 µm	iso.260-prog.280 °C	1010-11449
	30 m	2.00 µm	iso.300-prog.320 °C	1010-11467		60 m	2.00 µm	iso.300-prog.320 °C	1010-11469
		5.00 µm	iso.260-prog.280 °C	1010-11469			5.00 µm	iso.260-prog.280 °C	1010-11469

InertCap 1 ProGuard (Built-in Guard Column)

I.D.	Length	Thickness	Guard Column Length	Max. Temperature	Cat.No.
0.25 mm	30 m	0.25 µm	2 m	iso.325-prog.350 °C	1010-11172
			5 m	iso.325-prog.350 °C	1010-11173
			10 m	iso.325-prog.350 °C	1010-11174

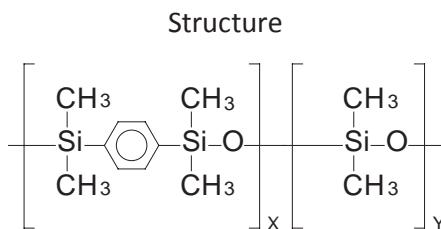
InertCap 1 Fast GC

I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.18 mm	15 m	0.18 µm	iso.325-prog.350 °C	1010-11021
		0.28 µm	iso.325-prog.350 °C	1010-11022
	20 m	0.18 µm	iso.325-prog.350 °C	1010-11031
		0.28 µm	iso.325-prog.350 °C	1010-11032

InertCap 5MS/Sil

InertCap 5MS/Sil

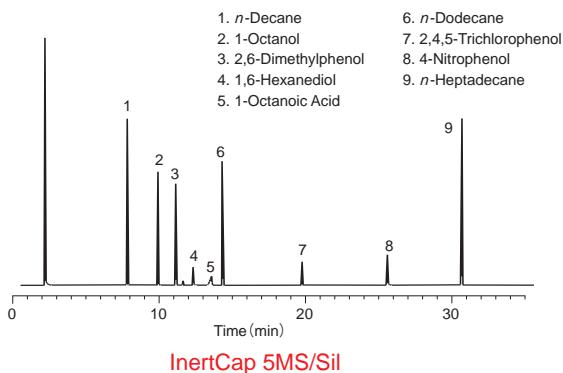
- 5 % Diphenyl (equiv.) – Dimethylpolysilphenylene Siloxane
- USP Phase G27
- Low Polarity
- Cross-Linked
- Ultra Low Bleed
- Equivalents : DB-5ms, Rxi-5Sil MS, VF-5ms, SLB-5, BPX-5



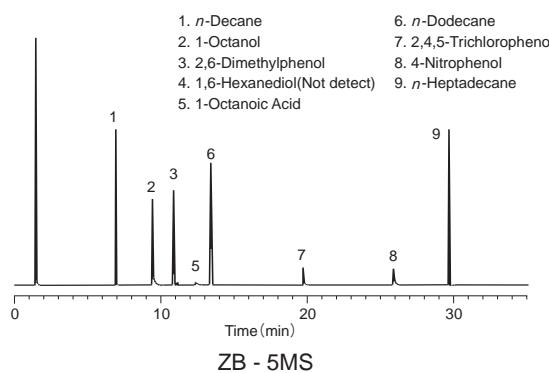
InertCap 5MS/Sil is a low polar column bonded 5 % diphenyl (equiv.) – 95 % dimethylpolysilphenylene siloxane. Designed for GC/MS, InertCap 5MS/Sil achieves the higher heat resistance and lower bleeding by arylene technology. In addition to our basic performance and quality inspection, pesticide mixture sample is analyzed for the further rigorous inspection for each lot to guarantee the product reliability.

Comparison with Other Brands

Acidic Compounds

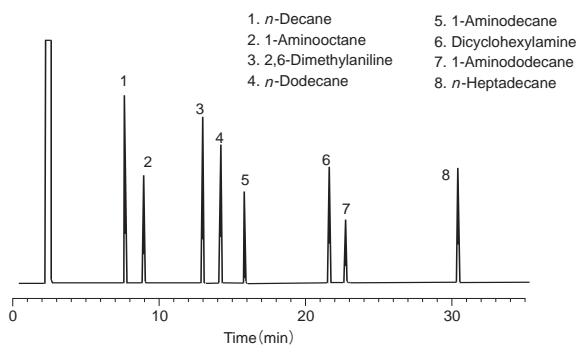


InertCap 5MS/Sil

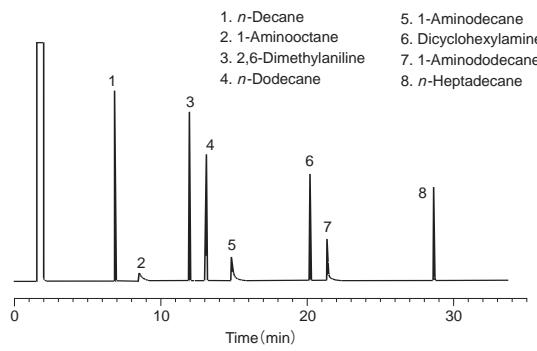


ZB - 5MS

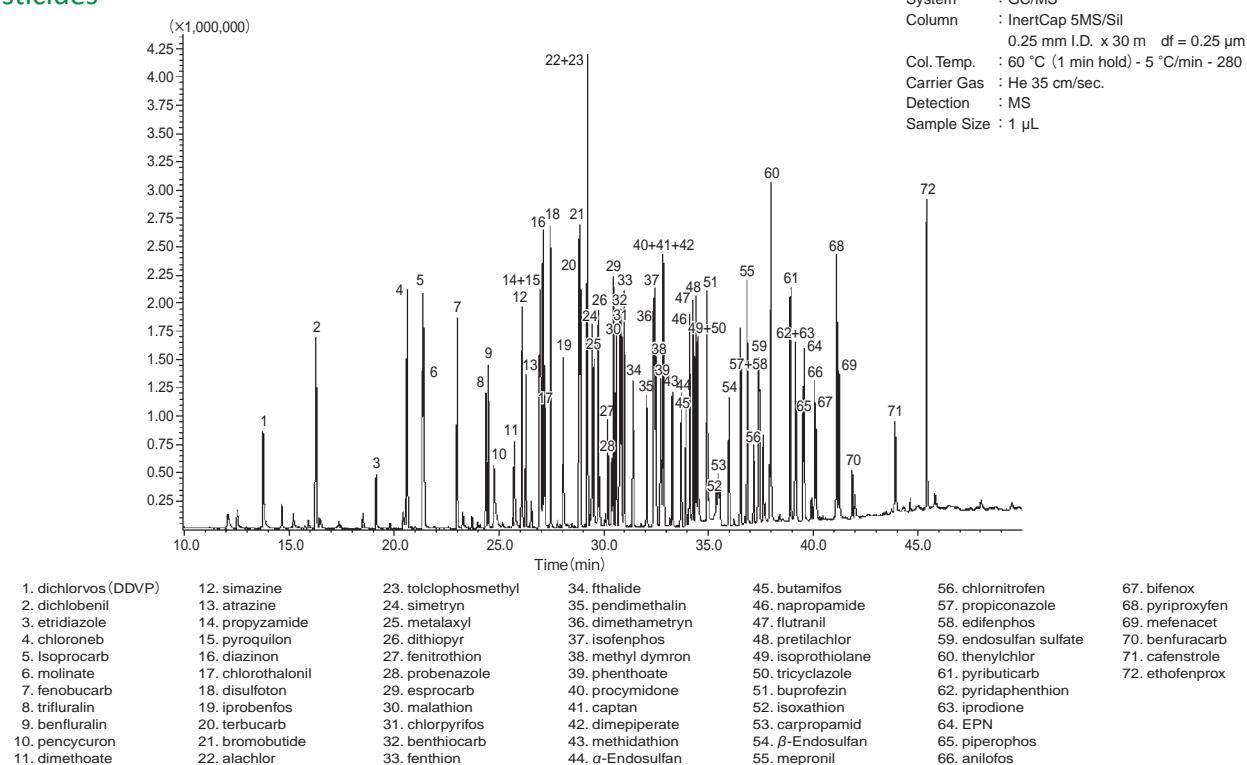
Basic Compounds



InertCap 5MS/Sil



ZB - 5MS

InertCap 5MS/Sil**Pesticides****InertCap 5MS/Sil**

I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.18 mm	20 m	0.36 µm	iso.325-prog.350 °C	1010-15033
	15 m	0.10 µm	iso.325-prog.350 °C	1010-15120
		0.25 µm	iso.325-prog.350 °C	1010-15122
		0.50 µm	iso.325-prog.350 °C	1010-15124
	30 m	0.10 µm	iso.325-prog.350 °C	1010-15140
		0.25 µm	iso.325-prog.350 °C	1010-15142
		0.50 µm	iso.325-prog.350 °C	1010-15144
		1.00 µm	iso.325-prog.350 °C	1010-15145
	60 m	0.10 µm	iso.325-prog.350 °C	1010-15160
		0.25 µm	iso.325-prog.350 °C	1010-15162
0.25 mm	15 m	0.10 µm	iso.325-prog.350 °C	1010-15220
		0.25 µm	iso.325-prog.350 °C	1010-15222
		0.50 µm	iso.325-prog.350 °C	1010-15224
	30 m	0.10 µm	iso.325-prog.350 °C	1010-15240
		0.25 µm	iso.325-prog.350 °C	1010-15242
		0.50 µm	iso.325-prog.350 °C	1010-15244
		1.00 µm	iso.325-prog.350 °C	1010-15245
	60 m	0.10 µm	iso.325-prog.350 °C	1010-15260
		0.25 µm	iso.325-prog.350 °C	1010-15262
0.32 mm	15 m	0.10 µm	iso.325-prog.350 °C	1010-15220
		0.25 µm	iso.325-prog.350 °C	1010-15222
		0.50 µm	iso.325-prog.350 °C	1010-15224
	30 m	0.10 µm	iso.325-prog.350 °C	1010-15240
		0.25 µm	iso.325-prog.350 °C	1010-15242
		0.50 µm	iso.325-prog.350 °C	1010-15244

InertCap 5MS/Sil ProGuard (Built-in Guard Column)

I.D.	Length	Thickness	Guard Column Length	Max. Temperature	Cat.No.
0.25 mm	30 m	0.25 µm	2 m	iso.325-prog.350 °C	1010-15172
			5 m	iso.325-prog.350 °C	1010-15173
			10 m	iso.325-prog.350 °C	1010-15174

InertCap 5MS/Sil T.L. (Built-in Transfer Line)

I.D.	Length	Thickness	Transfer Line Length	Max. Temperature	Cat.No.
0.25 mm	30 m	0.25 µm	2 m	iso.325-prog.350 °C	1010-15192

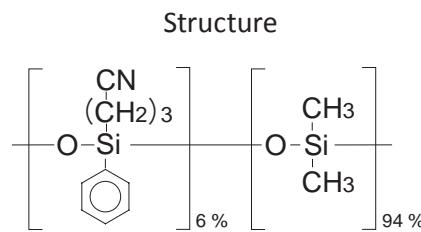
InertCap 5MS/Sil Fast GC

I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.18 mm	20 m	0.18 µm	iso.325-prog.350 °C	1010-15031
	40 m	0.18 µm	iso.325-prog.350 °C	1010-15051

InertCap 624MS

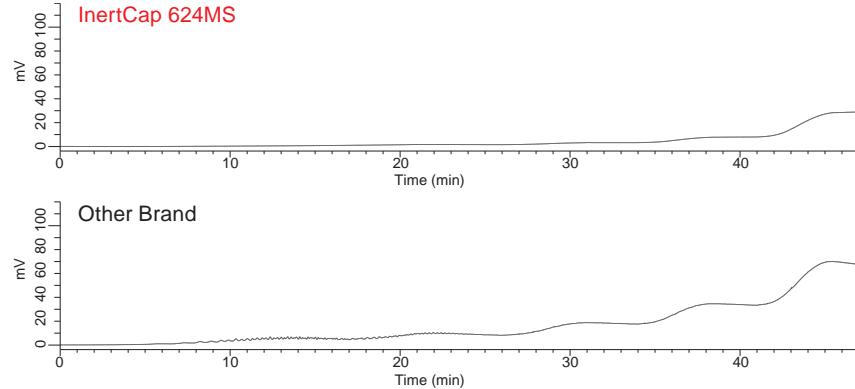
InertCap 624MS

- 6 % Cyanopropylphenyl – 94 % Dimethylpolysiloxane
 - USP Phase G43
 - Medium Polarity
 - Cross-Linked
 - Equivalents: DB-624, HP-VOC, Rtx-624, Rxi-624Sil MS, VF-624MS
- InertCap 624MS is medium polar column bonded 6 % cyanopropylphenyl and 94 % dimethylpolysiloxane. The structure is the same as InertCap 624, designed for low bleed, stable batch control and highest inertness.



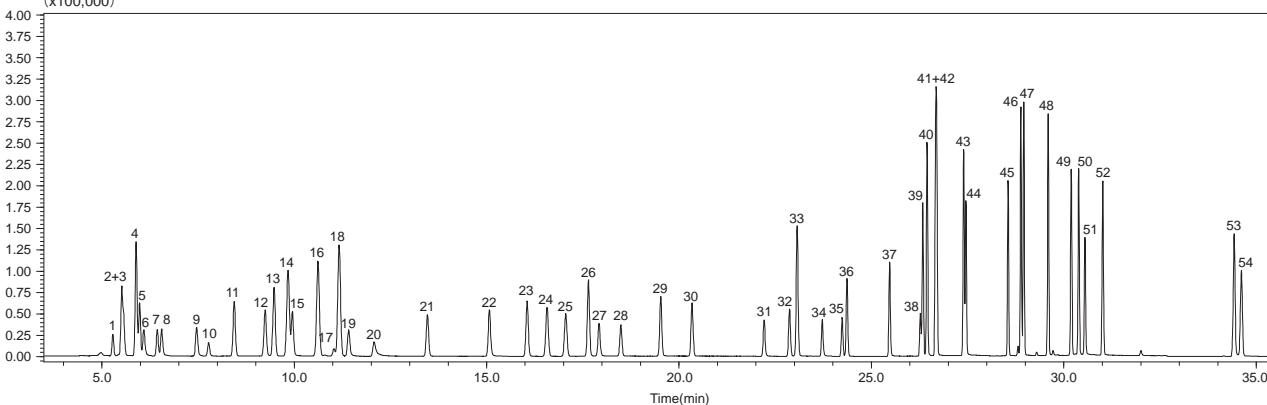
Comparison of Bleeding

Oven Temp. : 50 °C - 10 °C/min - 250 °C (5 min) -
10 °C /min - 280 °C (5 min) - 10 °C/min -
300 °C (5 min) - 10 °C/min - 320 °C (5 min)



Analysis of Volatile Organic Compounds in Air.

Column : InertCap 624MS 0.25 mm I.D. x 60 m df = 1.40 µm
Col. Temp. : 40 °C (5 min) - 3.5 °C/min - 80 °C (0 min hold) - 6 °C/min
- 120 °C - 15 °C/min - 200 °C (11 min hold)
Detection : MS SIM
Sample : 51 Compounds VOC 500 ppt(v/v) + Internal Standard (I.S.) 3 Compounds 500 ppt(v/v)

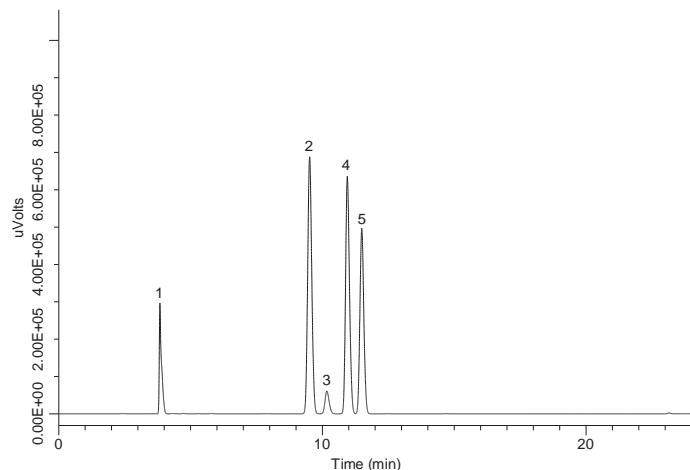


No.		No.		No.		No.		
1.	HFC-134a	14.	CFC-113	27.	1,2-Dichloroethane	40.	Ethylbenzene	
2.	CFC-12	15.	1,1-Dichloroethylene	28.	Fluorobenzene(I.S.)	41+42.	<i>m, p</i> -Xylene	
3.	HCFC-22	16.	HCFC-225ca	29.	Trichloroethylene	43.	<i>o</i> -Xylene	
4.	CFC-114	17.	3-Chloro-1-propene	30.	1,2-Dichloropropane	44.	Styrene	
5.	HCFC-142b	18.	HCFC-225cb	31.	cis-1,3-Dichloropropene	45.	1,1,2,2-Tetrachloroethane	
6.	Chloromethane	19.	Dichloromethane	32.	Toluene-d8(I.S.)	46.	4-Ethyltoluene	
7.	Vinyl chloride	20.	Acrylonitrile	33.	Toluene	47.	1,3,5-Trimethylbenzene	
8.	1,3-Butadiene	21.	1,1-Dichloroethane	34.	trans-1,3-Dichloropropene	48.	1,2,4-Trimethylbenzene	
9.	Bromomethane	22.	cis-1,2-Dichloroethylene	35.	1,1,2-Trichloroethane	49.	1,3-Dichlorobenzene	
10.	Ethyl chloride	23.	Chloroform	36.	Tetrachloroethylene	50.	1,4-Dichlorobenzene	
11.	CFC-11	24.	1,1,1-Trichloroethane	37.	1,2-Dibromoethane	51.	Benzylchloride	
12.	Dichlorofluoroethane	25.	Tetrachloromethane	38.	Chlorobenzene-d5(I.S.)	52.	1,2-Dichlorobenzene	
13.	HCFC-123	26.	Benzene	39.	Monochlorobenzene	53.	1,2,4-Trichlorobenzene	
							54.	Hexachloro-1,3-butadiene

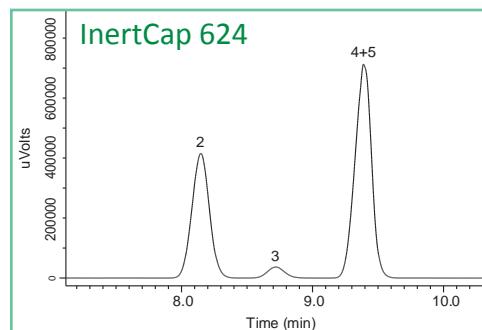
InertCap 624MS

System : GC/FID
 Column : InertCap 624MS
 0.32 mm I.D. x 30 m df = 1.80 μ m
 Col. Temp. : 40 °C (20 min hold) - 10 °C/min - 240 °C (20 min hold)
 Carrier Gas : He 2.2 mL/min
 Injection : Split flow 44 mL/min
 140 °C
 Detection : FID Auto Range
 250 °C
 Sample Size : 1.0 μ L
 Analyte in Dimethyl sulfoxide

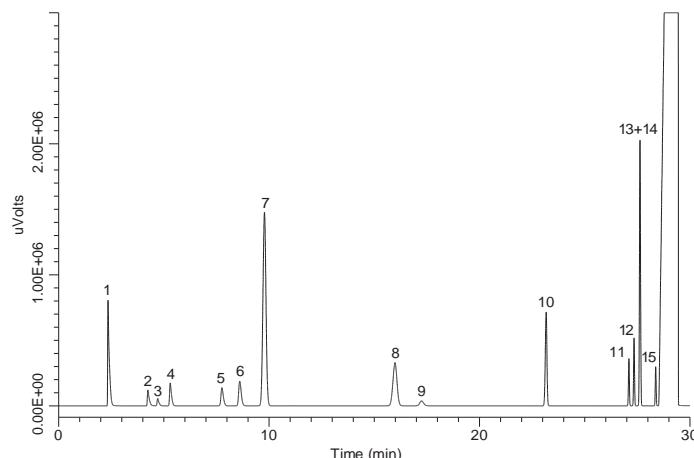
Organic Solvent-1



1. 1,1-Dichloroethene (40 mg/mL)
2. 1,1,1-Trichloroethane (50 mg/mL)
3. Carbon tetrachloride (20 mg/mL)
4. Benzene (10 mg/mL)
5. 1,2-Dichloroethane (25 mg/mL)



Organic Solvent-2



1. Methanol (15.0 mg/mL)
2. Acetonitrile (2.05 mg/mL)
3. Dichloromethane (3.00 mg/mL)
4. *trans*-1,2-Dichloroethylene (4.70 mg/mL)
5. *cis*-1,2-Dichloroethylene (4.70 mg/mL)
6. Tetrahydrofuran (3.45 mg/mL)
7. Cyclohexane (19.4 mg/mL)
8. Methylcyclohexane (5.90 mg/mL)
9. 1,4-Dioxane (1.90 mg/mL)
10. Toluene (4.45 mg/mL)
11. Chlorobenzene (1.80 mg/mL)
12. Ethylbenzene (1.84 mg/mL)
13. *m*-Xylene (6.51 mg/mL)
14. *p*-Xylene (1.52 mg/mL)
15. *o*-Xylene (0.98 mg/mL)

InertCap 624MS

I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.18 mm	20 m	1.00 μ m	iso.300-prog.320 °C	1010-64535
0.25 mm	30 m	1.40 μ m	iso.300-prog.320 °C	1010-64646
	60 m		iso.300-prog.320 °C	1010-64666
0.32 mm	30 m	1.80 μ m	iso.300-prog.320 °C	1010-64747
	60 m		iso.300-prog.320 °C	1010-64767
0.53 mm	30 m	3.00 μ m	iso.280-prog.300 °C	1010-64948
	60 m		iso.280-prog.300 °C	1010-64968

InertCap 624MS Fast GC

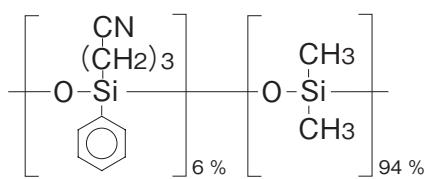
I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.18 mm	20 m	1.00 μ m	iso.300-prog.320 °C	1010-64535

InertCap 624

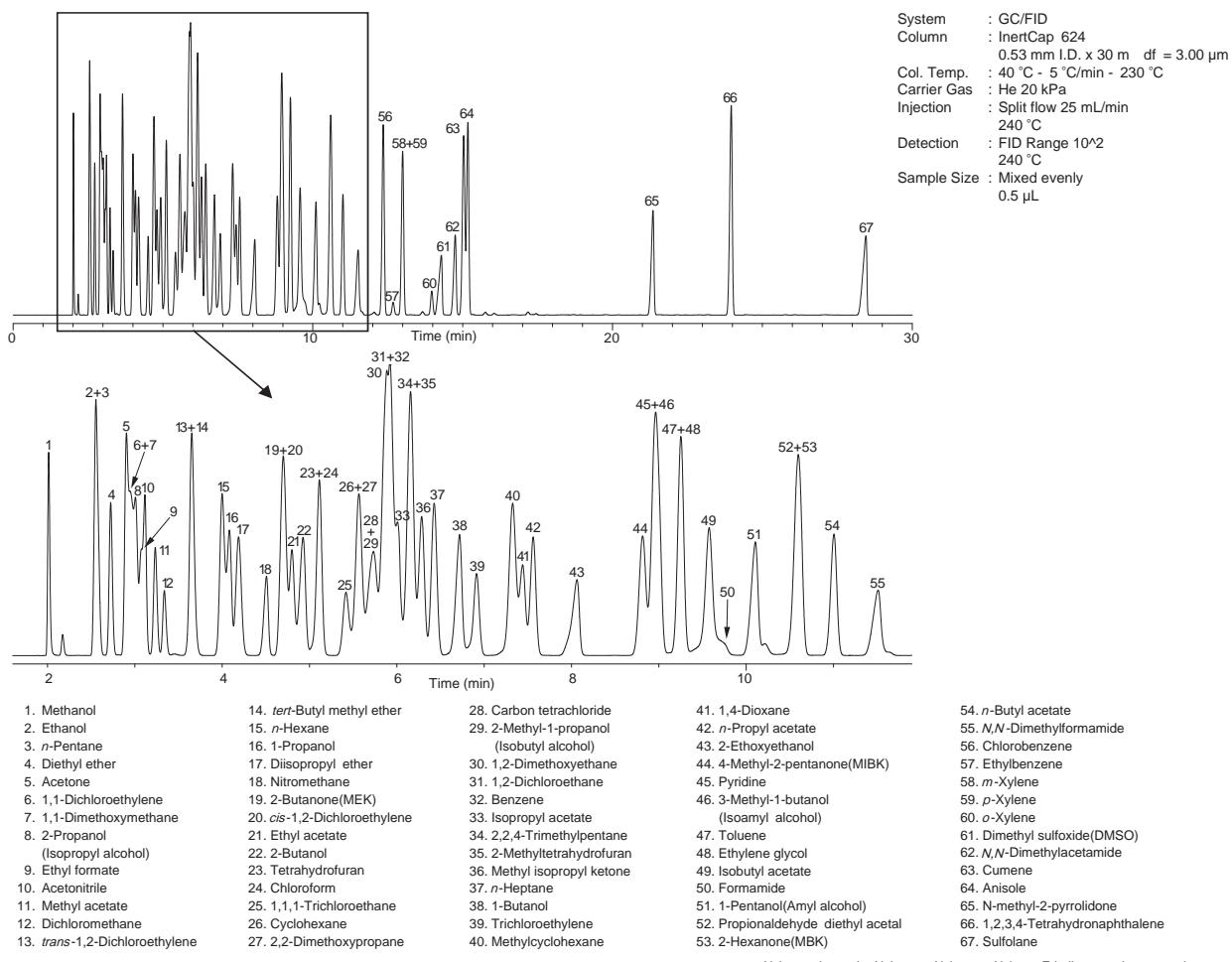
InertCap 624

- 6 % Cyanopropylphenyl - 94 % Dimethylpolysiloxane
 - USP Phase G43
 - Medium Polarity
 - Cross-Linked
 - Equivalents:DB-624, HP-VOC, Rtx-624, VF-624ms
- InertCap 624 is a medium polar column bonded 6 % cyanopropylphenyl and 94 % dimethylpolysiloxane designed for VOC analysis. InertCap 624 is optimal for the analysis of "acetaldehyde and methanol in ethanol" defined in the Japanese Pharmacopeia Fifteenth Edition.

Structure



Residual Solvents in Pharmaceuticals



InertCap 624

I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.25 mm	30 m	1.40 µm	iso.260-prog.260 °C	1010-14646
	60 m	1.40 µm	iso.260-prog.260 °C	1010-14666
0.32 mm	30 m	1.80 µm	iso.260-prog.260 °C	1010-14747
		3.00 µm	iso.260-prog.260 °C	1010-14748
0.53 mm	60 m	1.80 µm	iso.260-prog.260 °C	1010-14767
	30 m	3.00 µm	iso.260-prog.260 °C	1010-14948
	75 m	3.00 µm	iso.260-prog.260 °C	1010-14978

InertCap 624 Fast GC

I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.18 mm	20 m	1.00 µm	iso.260-prog.260 °C	1010-14535
	40 m	1.00 µm	iso.260-prog.260 °C	1010-14555

InertCap 624 for Ethanol

I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.32 mm	30 m	1.80 µm	iso.260-prog.260 °C	1010-14750

InertCap 25

InertCap 25

- 25 % Diphenyl - 75 % Dimethylpolysiloxane
- USP Phase G28
- Medium Polarity
- Cross-Linked
- No Equivalent

InertCap 25 is a medium polar column bonded 25 % diphenyl - 75 % dimethylpolysiloxane. With different selectivities from the other medium polar columns, InertCap 25 is useful to identify and quantify in a variety of analyses.

Packaging Material Related Solvents

System : GC/FID

Column : InertCap 25

0.25 mm I.D. x 60 m df = 1.00 µm

Col. Temp. : 40 °C (5 min hold) - 4 °C/min - 200 °C

Carrier Gas : He 160 kPa

Injection : Split flow 100 mL/min

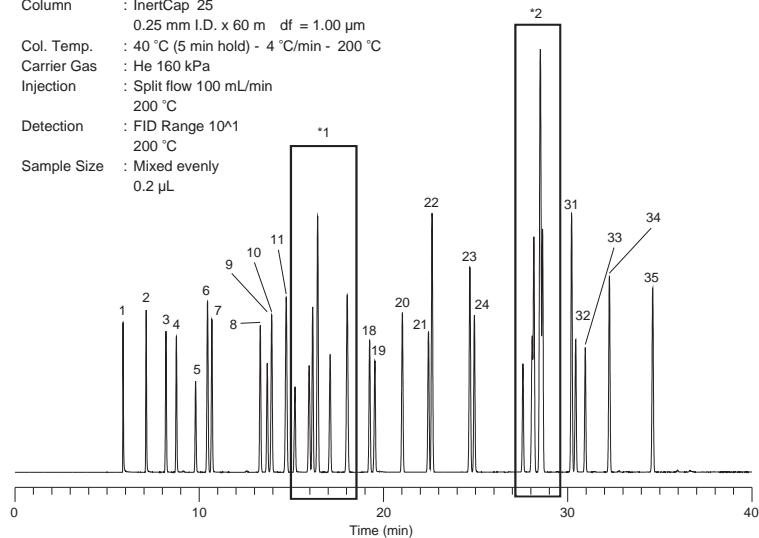
200 °C

Detection : FID Range 10¹

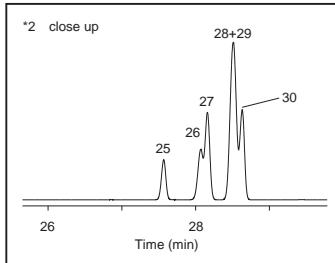
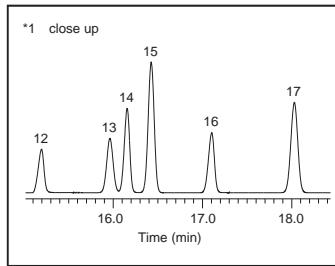
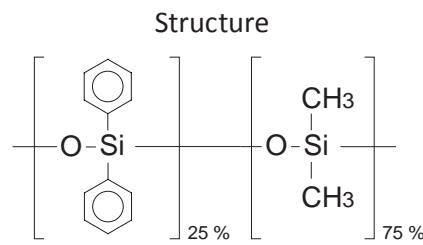
200 °C

Sample Size : Mixed evenly

0.2 µL



1. Methanol
2. Ethanol
3. 2-Propanol(Isopropyl alcohol)
4. Acetone
5. Methyl acetate
6. n-Hexane
7. 1-Propanol
8. 2-Butanone(MEK)
9. Ethyl acetate
10. 2-Methyl-1-propanol(Isobutyl alcohol)
11. Cyclohexane
12. 2-Methoxyethanol(Methyl cellosolve)
13. Isopropyl acetate
14. 1-Butanol
15. Benzene
16. 1-Methoxy-2-propanol
(Propylene glycol monomethyl ether)
17. Methylcyclohexane
18. n-Propyl acetate
19. 2-Ethoxyethanol(Cellosolve)
20. 4-Methyl-2-pentanone(MIBK)
21. Isobutyl acetate
22. Toluene
23. Ethylcyclohexane
24. n-Butyl acetate
25. 2-Methoxyethyl acetate (Methyl cellosolve acetate)



26. Diacetone alcohol
27. Ethylbenzene
28. m-Xylene
29. p-Xylene
30. 1-Methoxy-2-propyl acetate
(Propylene glycol monomethyl ether acetate)
31. o-Xylene
32. 2-Butoxyethanol(Butyl cellosolve)
33. 2-Ethoxyethyl acetate(Cellosolve acetate)
34. Cyclohexanone
35. 2-Methylcyclohexanone

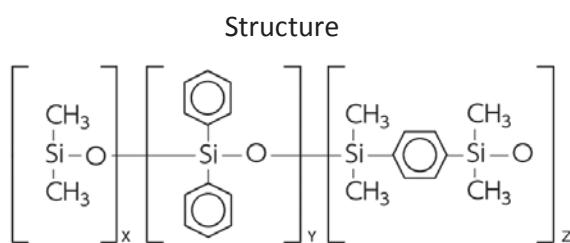
InertCap 25

I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.25 mm	15 m	0.25 µm	iso.280-prog.300 °C	1010-62122
		0.50 µm	iso.280-prog.300 °C	1010-62124
		1.00 µm	iso.260-prog.280 °C	1010-62125
0.25 mm	30 m	0.25 µm	iso.280-prog.300 °C	1010-62142
		0.50 µm	iso.280-prog.300 °C	1010-62144
		1.00 µm	iso.260-prog.280 °C	1010-62145
0.25 mm	60 m	0.25 µm	iso.280-prog.300 °C	1010-62162
		0.50 µm	iso.280-prog.300 °C	1010-62164
		1.00 µm	iso.260-prog.280 °C	1010-62165

I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.32 mm	15 m	0.25 µm	iso.280-prog.300 °C	1010-62222
		0.50 µm	iso.280-prog.300 °C	1010-62224
		1.00 µm	iso.260-prog.280 °C	1010-62225
0.32 mm	30 m	0.25 µm	iso.280-prog.300 °C	1010-62242
		0.50 µm	iso.280-prog.300 °C	1010-62244
		1.00 µm	iso.260-prog.280 °C	1010-62245
0.32 mm	60 m	0.25 µm	iso.280-prog.300 °C	1010-62262
		0.50 µm	iso.280-prog.300 °C	1010-62264
		1.00 µm	iso.260-prog.280 °C	1010-62265
0.53 mm	15 m	1.00 µm	iso.260-prog.280 °C	1010-62425
	30 m	1.00 µm	iso.260-prog.280 °C	1010-62445

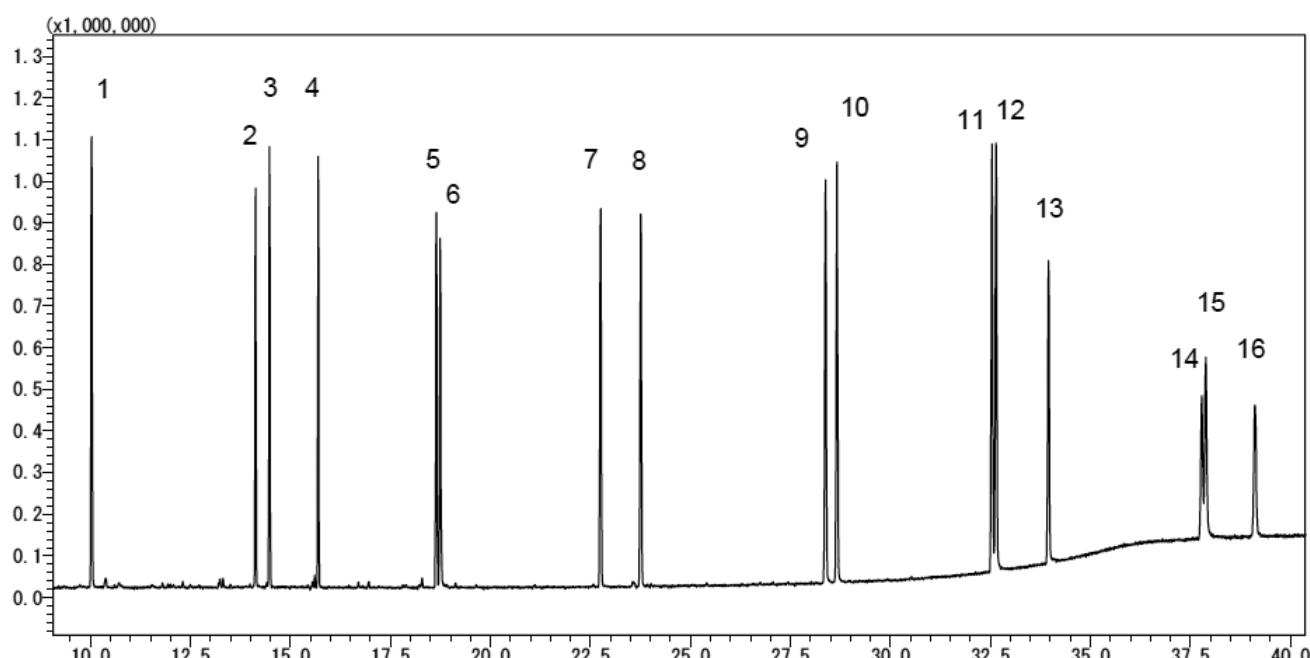
InertCap 35MS

- 35 % Diphenyl(equiv.)-65 % Dimethylpolysiloxane
- Equivalent to USP Phase G42
- Medium Polarity
- Cross-Linked
- Suitable for pesticides and polycyclic aromatic analysis
- Equivalents : DB-35ms UI, VF-35ms, Rx-35sil MS



InertCap 35 is a medium polar column bonded 35 % diphenyl - 65 % dimethylpolysiloxane. With a stronger polarity than InertCap 25, InertCap 35 also shows high separation efficiency for the analyses of semi volatile compounds and solvents. By increasing the heat resistance of the liquid phase, the maximum operating temperature of 360 °C can be achieved. Also designed for GC/MS analysis, the best in the world Achieves class inactivity and low bleed.

Analysis of Polycyclic Aromatics



System: GC/MS
Column: InertCap 35MS
(0.25 mm × 30 m df = 0.25 µm)
Col.Temp.: 55 °C(1 min) -10 °C/min-200 °C-
6 °C/min-320 °C(10min)
Carrier Gas: He, 40 cm/sec constant
Injection: Splitless
300 °C
Detection: MS TIC (70-400 m/z), SIM
Detector Temp: 300°C
Sample: TIC : 16 PAHs 1ppm
in (Dichloromethane/Benzene=1/1), 1µL

- | | |
|-------------------|-----------------------------|
| 1. Naphthalene | 9. Benz[a]anthracene |
| 2. Acenaphthylene | 10. Chrysene |
| 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-C,D)pyrene |
| 7. Fluoranthene | 15. Dibenz[a,h]anthracene |
| 8. Pyrene | 16. Benzo[ghi]perylene |

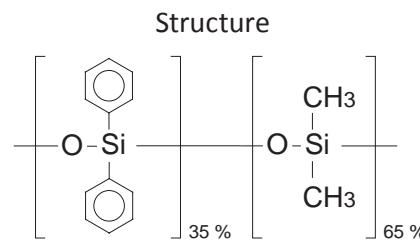
I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.18 mm	20 mm	0.18 µm	iso.340-prog.360 °C	1010-63531
	15 mm	0.25 µm	iso.340-prog.360 °C	1010-63622
	30 mm	0.25 µm	iso.340-prog.360 °C	1010-63642
	60 mm	0.25 µm	iso.340-prog.360 °C	1010-63662
0.25 mm	15 mm	0.25 µm	iso.340-prog.360 °C	1010-63722
	30 mm	0.25 µm	iso.340-prog.360 °C	1010-63742
	60 mm	0.25 µm	iso.340-prog.360 °C	1010-63762
0.32 mm	15 mm	0.25 µm	iso.340-prog.360 °C	
	30 mm	0.25 µm	iso.340-prog.360 °C	
	60 mm	0.25 µm	iso.340-prog.360 °C	

InertCap 35

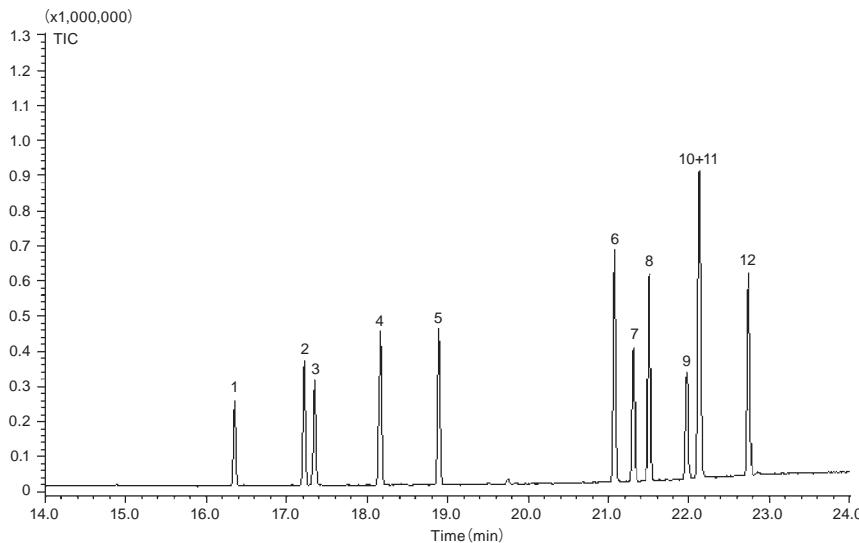
InertCap 35

- 35 % Diphenyl - 65 % Dimethylpolysiloxane
- USP Phase G42
- Medium Polarity
- Cross-Linked
- Equivalents:DB-35ms, DB-35, HP-35ms, HP-35, Rtx-35, VF-35ms

InertCap 35 is a medium polar column bonded 35 % diphenyl - 65 % dimethylpolysiloxane. With a stronger polarity than InertCap 25, InertCap 35 also shows high separation efficiency for the analyses of semi volatile compounds and solvents.



Pesticides



System : GC/MS
Column : InertCap 35
0.25 mm I.D. x 30 m df = 0.25 μ m
Col. Temp. : 60 °C - 10 °C/min - 290 °C (7 min hold)
Carrier Gas : He 35 cm/sec
Injection : Split 1:30
250 °C
Detection : MS Scan (45 - 500 m/z)
Interface Temp. 280 °C
Sample Size : 10 μ g/mL in Isooctane
1 μ L

1. α -BHC
2. γ -BHC
3. β -BHC
4. Heptachlor
5. Aldrin
6. p,p' -DDE
7. Dieldrin
8. α,p' -DDD
9. Endrin
10. p,p' -DDD
11. α,p' -DDT
12. p,p' -DDT

InertCap 35

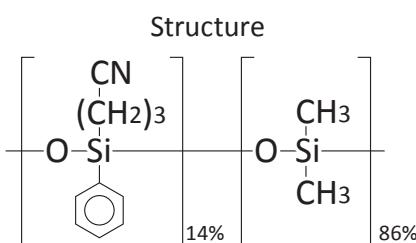
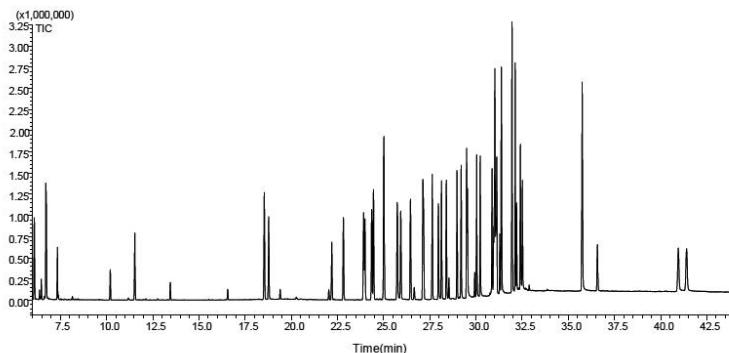
I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.25 mm	15 m	0.25 μ m	iso.280-prog.300 °C	1010-63122
		0.50 μ m	iso.280-prog.300 °C	1010-63124
		1.00 μ m	iso.260-prog.280 °C	1010-63125
	30 m	0.25 μ m	iso.280-prog.300 °C	1010-63142
		0.50 μ m	iso.280-prog.300 °C	1010-63144
		1.00 μ m	iso.260-prog.280 °C	1010-63145
	60 m	0.25 μ m	iso.280-prog.300 °C	1010-63162
		0.50 μ m	iso.280-prog.300 °C	1010-63164
		1.00 μ m	iso.260-prog.280 °C	1010-63165
0.32 mm	15 m	0.25 μ m	iso.280-prog.300 °C	1010-63222
		0.50 μ m	iso.280-prog.300 °C	1010-63224
		1.00 μ m	iso.260-prog.280 °C	1010-63225
	30 m	0.25 μ m	iso.280-prog.300 °C	1010-63242
		0.50 μ m	iso.280-prog.300 °C	1010-63244
		1.00 μ m	iso.260-prog.280 °C	1010-63245
0.53 mm	60 m	0.25 μ m	iso.280-prog.300 °C	1010-63262
		0.50 μ m	iso.280-prog.300 °C	1010-63264
		1.00 μ m	iso.260-prog.280 °C	1010-63265
	15 m	1.00 μ m	iso.260-prog.280 °C	1010-63425
	30 m	0.50 μ m	iso.280-prog.300 °C	1010-63444
	30 m	1.00 μ m	iso.260-prog.280 °C	1010-63445

InertCap 1701MS

- 14 % Cyanopropylphenyl - 86 % Dimethylsiloxane
- USP Phase G46
- Medium Polarity
- Cross-Linked
- Suitable for pesticides, sugars, TMS derivatives, drugs and steroids
- Equivalent : VF-1701ms

InertCap 1701MS is a medium polar column incorporating 14 % cyanopropylphenyl and 86 % dimethylpolysiloxane, designed for GC/MS. Containing cyano groups as InertCap 1301, InertCap 1701MS has a stronger polarity than InertCap 25. It is suitable for pesticides screening analyses.

System : GC/MS
Column : 0.25 mm I.D x 30 m df = 0.25 μm
Col. Temp. : 40 °C (1 min) - 30 °C/min - 120 °C - 5 °C/min - 240 °C - 12/min - 300 °C(20 min)
Carrier Gas : He 1.0 mL/min (constant flow)
Injection : Splitless
250 °C
Detection : MS TIC(m/z 45-600)
Sample Size : 1 μL
Sample : 45 Pesticides



Compounds	Retention Time	Compounds	Retention Time
Alidochlor	11.532	Paclobutrazol	29.538
Diphenylamine	18.542	Chlorobenzilate	30.038
Propachlor	18.781	Flusilazole	30.226
Simazine	22.195	Bioresmethrin	30.866
Iprobenfos	22.826	Cyproconazole	30.986
Acetochlor	23.919	Benalaxyli	31.021
Dimethenamid	23.987	Fenoxyanil	31.081
Esprocarb	24.357	Carfentrazone ethyl	31.122
Prometryn	24.455	Propiconazole	31.285
Terbutryl	25.026	Mepronil	31.366
Metalaxyl	25.026	Thenylchlor	31.937
Terbacil	25.739	Tebufenpyrad	31.949
Metolachlor	25.739	Etoxazole	32.12
Diethofencarb	25.931	Etoxazole metab	32.194
Cyprodinil	26.456	Tebuconazole	32.399
Dimethametryn	27.126	Fenoxy carb	32.507
Dimepiperate	27.166	Etobenzanid	35.749
Diphenamid	27.635	Etofenprox	35.745
Tetraconazole	27.968	Butafenacil	36.572
Butachlor	28.134	Flumioxazin	40.951
Fenothiocarb	28.398	Indoxacarb	41.401
Pretilachlor	28.974	Metomistrobin (E)	29.493
Napropamide	29.197		

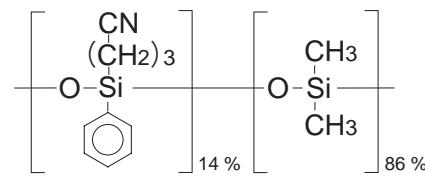
I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.25 mm	15 m	0.25 μm	iso.280-prog.300 °C	1010-61622
		0.50 μm		1010-61624
		1.00 μm		1010-61625
	30 m	0.25 μm		1010-61642
		0.50 μm		1010-61644
		1.00 μm		1010-61645
	60 m	0.25 μm		1010-61662
		0.50 μm		1010-61664
		1.00 μm		1010-61665
0.32 mm	15 m	0.25 μm		1010-61722
		0.50 μm		1010-61724
		1.00 μm		1010-61725
	30 m	0.25 μm		1010-61742
		0.50 μm		1010-61744
		1.00 μm		1010-61745
	60 m	0.25 μm		1010-61762
		0.50 μm		1010-61764
		1.00 μm		1010-61765

InertCap 1701

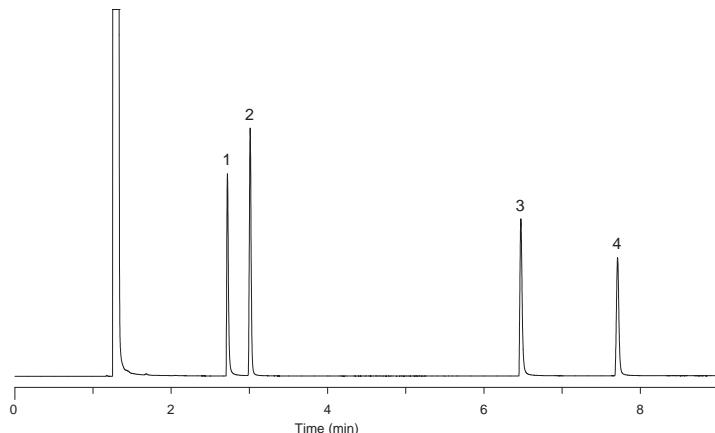
InertCap 1701

- 14 % Cyanopropylphenyl - 86 % Dimethylpolysiloxane
- USP Phase G46
- Medium Polarity
- Cross-Linked
- Equivalents: DB-1701, HP-1701, Rtx-1701, VF-1701ms, SPB-1701
InertCap 1701 is a medium polar column bonded 14 % cyanopropylphenyl and 86 % dimethylpolysiloxane. Containing cyano groups as InertCap 1301 InertCap 1701 has a stronger polarity than InertCap 25, InertCap 1701 is suitable for pesticides screening analyses.

Structure



Glycols and Glycerine



System	:	GC/FID
Column	:	InertCap 1701 0.32 mm I.D. x 30 m df= 1.00 µm
Col. Temp.	:	100 °C (5 min hold) - 7.5 °C/min - 220 °C
Carrier Gas	:	He 100 kPa
Injection	:	Split flow 53.6 mL/min 220 °C
Detection	:	FID Range 10^0 250 °C
Sample Size	:	500 µg/mL in Methanol 1 µL
Data Source	:	GC InertSearch No.GA100
Analyte	:	1. Ethylene glycol 2. Propylene glycol 3. Diethylene glycol 4. Glycerine

InertCap 1701

I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.25 mm	15 m	0.25 µm	iso.280-prog.300 °C	1010-61122
		0.50 µm	iso.280-prog.300 °C	1010-61124
		1.00 µm	iso.260-prog.280 °C	1010-61125
	30 m	0.25 µm	iso.280-prog.300 °C	1010-61142
		0.50 µm	iso.280-prog.300 °C	1010-61144
		1.00 µm	iso.260-prog.280 °C	1010-61145
	60 m	0.25 µm	iso.280-prog.300 °C	1010-61162
		0.50 µm	iso.280-prog.300 °C	1010-61164
		1.00 µm	iso.260-prog.280 °C	1010-61165
0.32 mm	15 m	0.25 µm	iso.280-prog.300 °C	1010-61222
		0.50 µm	iso.280-prog.300 °C	1010-61224
		1.00 µm	iso.260-prog.280 °C	1010-61225
	30 m	0.25 µm	iso.280-prog.300 °C	1010-61242
		0.50 µm	iso.280-prog.300 °C	1010-61244
		1.00 µm	iso.260-prog.280 °C	1010-61245
0.53 mm	60 m	0.25 µm	iso.280-prog.300 °C	1010-61262
		0.50 µm	iso.280-prog.300 °C	1010-61264
		1.00 µm	iso.260-prog.280 °C	1010-61265
	15 m	1.00 µm	iso.260-prog.280 °C	1010-61425
	30 m	1.00 µm	iso.260-prog.280 °C	1010-61445

InertCap 1701 Fast GC

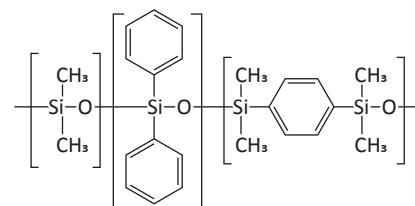
I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.18 mm	20 m	0.18 µm	iso.280-prog.300 °C	1010-61031

InertCap 17MS/Sil

- 50 % Diphenyl(equiv.) - 50 % Dimethylsilphenylene Siloxane
- USP Phase G3
- Medium Polarity
- Cross-Linked
- Equivalents: DB-17MS, VF-17ms, Rxi-17sil MS

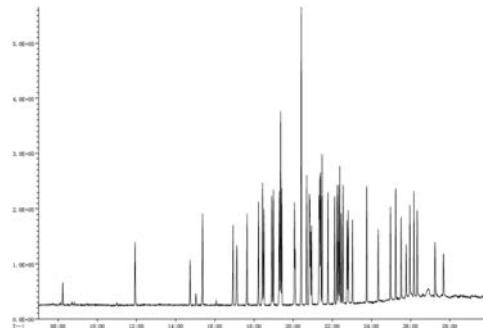
InertCap 17MS/Sil exhibits high thermal stability and low bleed because of silphenylenes in the stationary phase. Optimization of the surface processing has improved the inertness. This column is suitable for analysis of pesticides and polycyclic aromatic compounds.

Structure



Analysis of Pesticides

System : GC/MS
 Column : InertCap 17MS/Sil
 Col.Size : 0.25 mm I.D. x 30 m df = 0.25 µm
 Col. Temp. : 50 °C (1 min hold) - 10 °C/min - 300 °C (4 min hold)
 Carrier Gas : 1.0 mL/min
 Injection : 250 °C
 MSD I.F.Temp.: 300 °C
 I.S. Temp. : 200 °C
 Sample Size : 1 µL



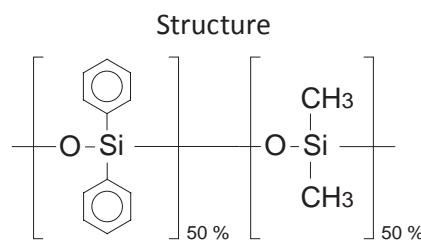
1. 0:11:56	Dichlorvos	14. 0:19:26	Isazophos	25. 0:21:24	Fenthion
2. 0:14:45	Mevinphos	15. 0:20:05	Chlorpyriphos methyl	26. 0:21:29	Isofenphos
3. 0:15:23	Methacrifos	16. 0:20:07	Phosphamidon	27. 0:21:47	Chlorfenvinphos(E or Z)
4. 0:16:56	Ethoprophos	17. 0:20:25	Parathion methyl	28. 0:22:07	Quinalphos
5. 0:17:08	Cadusafos	18. 0:20:42	+ Pirimiphos methyl	29. 0:22:15	Propaphos
6. 0:17:39	Phorate	19. 0:20:50	+ Tolclofos methyl	30. 0:22:19	Fosthiazate
7. 0:18:14	Terbufos	20. 0:20:51	Chlorpyriphos	31. 0:22:23	Phentoate
8. 0:18:27	Diazinon	21. 0:20:54	Malathion	32. 0:22:28	Prothiofos
9. 0:18:31	Salithion	22. 0:20:57	Fenitrothion	33. 0:22:33	Butamifos
10. 0:18:55	Fonofos	23. 0:21:20	Dimethylvinphos(E or Z)	34. 0:22:46	Tetrachlorvinphos
11. 0:19:00	Etrimes	24. 0:21:22	Dimethylvinphos(E or Z)	35. 0:22:49	Fenamiphos
12. 0:19:18	Cyanophos		+ Dimethoate	36. 0:23:02	Profenophos
13. 0:19:22	Dichlofenthion				Methidathion
				37. 0:23:46	Ethion
				38. 0:24:21	Fensulfothion
				39. 0:24:59	Triazophos
				40. 0:25:15	Edifenphos
				41. 0:25:31	Piperophos
				42. 0:25:47	EPN
				43. 0:25:58	Pyridaphenthion
				44. 0:26:10	Anilofos
				45. 0:26:20	Phosalone
				46. 0:27:15	Pyraclofos
				47. 0:27:41	Azinphos methyl

I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.18 mm	20 m	0.18 µm	iso.340 °C-prog.360 °C	1010-20531
	30 m	0.18 µm	iso.340 °C-prog.360 °C	1010-20541
0.25 mm	15 m	0.25 µm	iso.340 °C-prog.360 °C	1010-20622
	30 m	0.25 µm	iso.340 °C-prog.360 °C	1010-20642
	60 m	0.25 µm	iso.340 °C-prog.360 °C	1010-20662
0.32 mm	15 m	0.25 µm	iso.340 °C-prog.360 °C	1010-20722
	30 m	0.25 µm	iso.340 °C-prog.360 °C	1010-20742
	60 m	0.25 µm	iso.340 °C-prog.360 °C	1010-20762

InertCap 17MS

InertCap 17MS

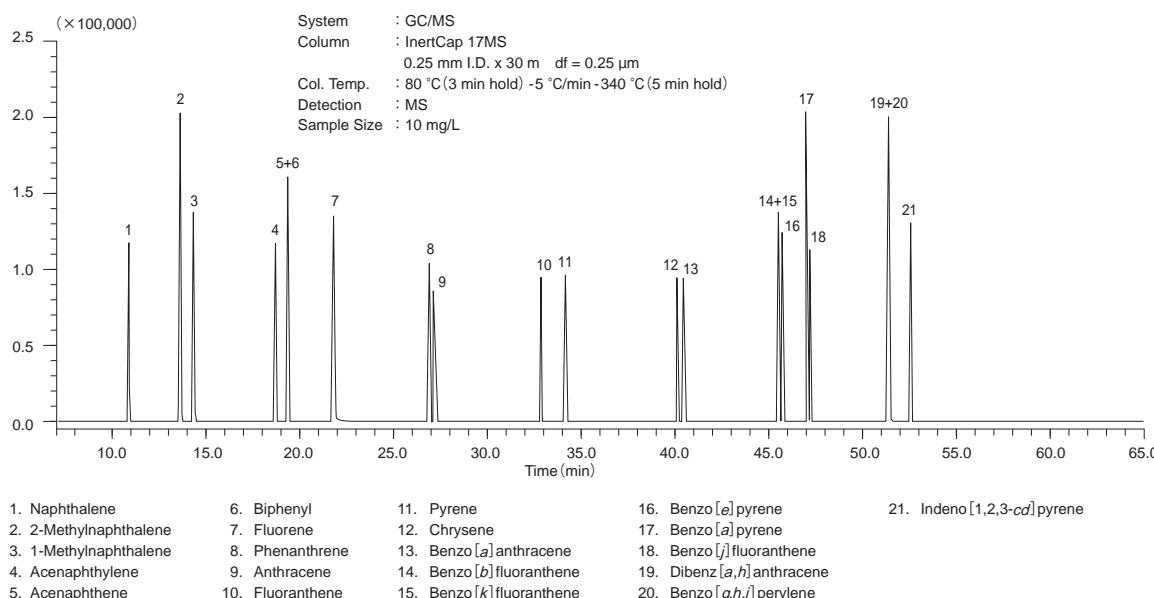
- 50 % Diphenyl - 50 % Dimethylpolysiloxane
- USP Phase G3
- Medium Polarity
- Cross-Linked
- Ultra Low Bleed
- Equivalents:DB-17ms, Rxi-17, VF-17ms, SPB-17



InertCap 17MS is a medium polar column bonded 50 % diphenyl - 50 % dimethylpolysiloxane, designed for GC/MS.

InertCap 17MS achieves one of the world highest inertness and lowest bleed, and is suitable for microanalyses such as pesticides analyses.

21 Aromatic Hydrocarbons



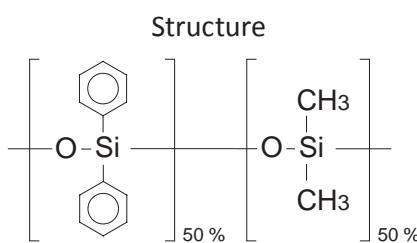
InertCap 17MS

I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.25 mm	15 m	0.25 μm	iso.320-prog.340 °C	1010-20122
	30 m	0.25 μm	iso.320-prog.340 °C	1010-20142
	60 m	0.25 μm	iso.320-prog.340 °C	1010-20162
0.32 mm	15 m	0.25 μm	iso.320-prog.340 °C	1010-20222
	30 m	0.25 μm	iso.320-prog.340 °C	1010-20242
	60 m	0.25 μm	iso.320-prog.340 °C	1010-20262

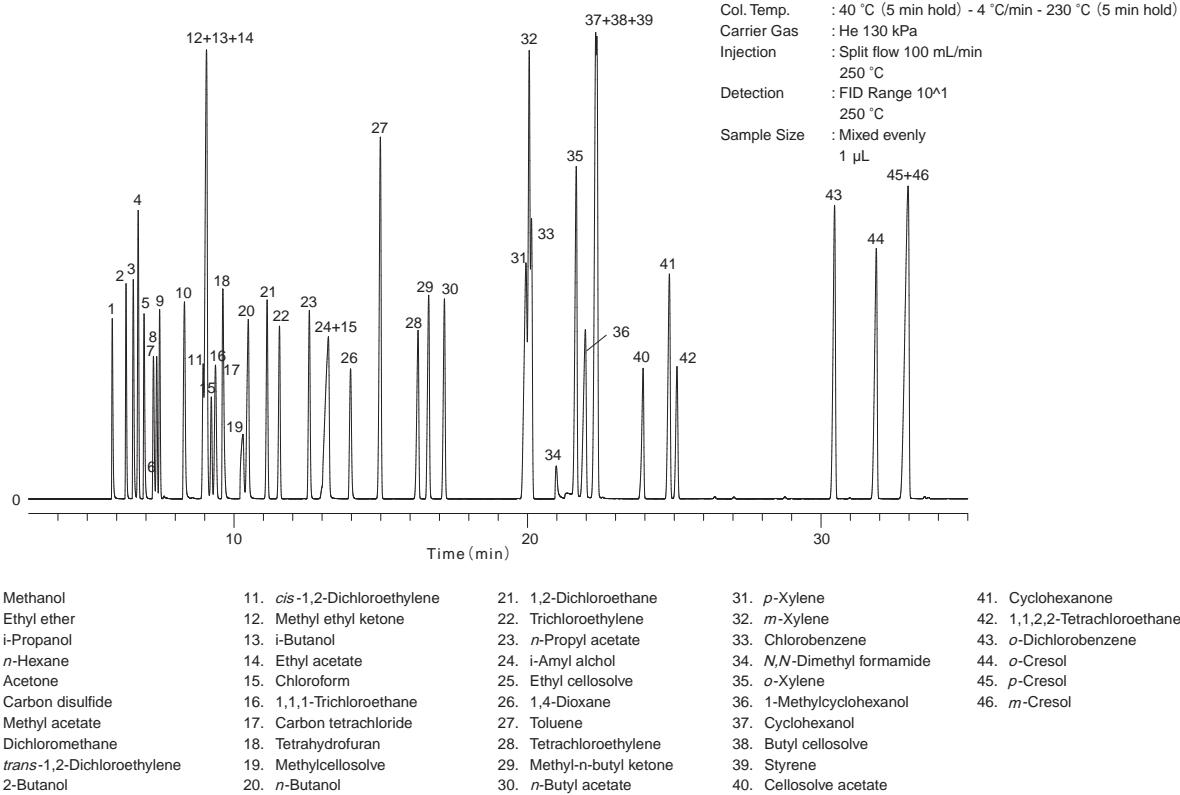
InertCap 17

- 50 % Diphenyl - 50 % Dimethylpolysiloxane
- USP Phase G3
- Medium Polarity
- Cross-Linked
- Equivalents:DB-17, HP-50, Rtx-50, CP-Sil 24CB, SPB-50

InertCap 17 is a medium polar column bonded 50 % diphenyl - 50 % dimethylpolysiloxane. With stronger polarity than InertCap 35, InertCap 17 also shows high separation efficiency for general and pesticides analyses.



46 Organic Solvents



InertCap 17

I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.25 mm	15 m	0.25 µm	iso.320-prog.340 °C	1010-65122
	30 m	0.15 µm	iso.320-prog.340 °C	1010-65141
	60 m	0.25 µm	iso.320-prog.340 °C	1010-65142
0.32 mm	30 m	0.25 µm	iso.320-prog.340 °C	1010-65242
	60 m	0.25 µm	iso.320-prog.340 °C	1010-65262
0.53 mm	15 m	1.00 µm	iso.300-prog.320 °C	1010-65425
	30 m	1.00 µm	iso.300-prog.320 °C	1010-65445

InertCap 17 Fast GC

I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.18 mm	20 m	0.18 µm	iso.320-prog.340 °C	1010-65031

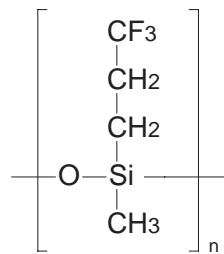
InertCap 210

InertCap 210

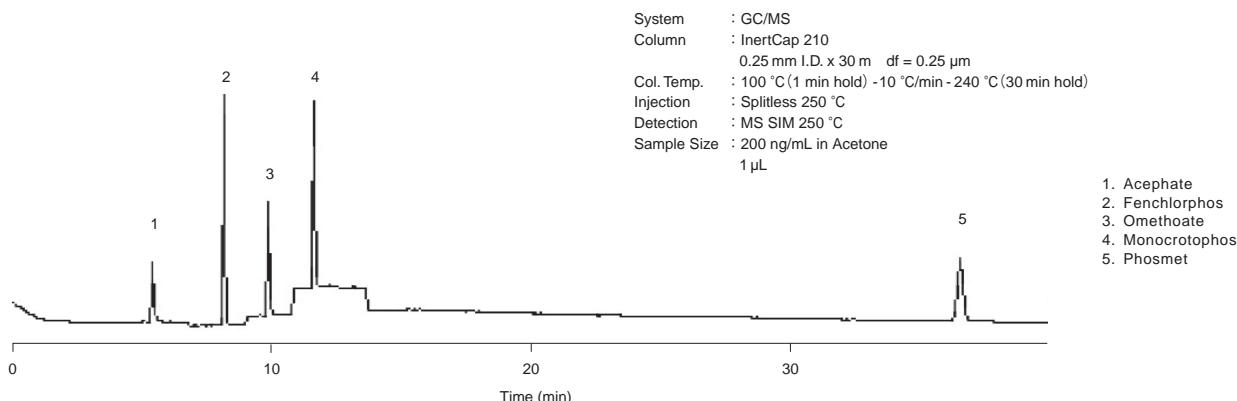
- 50 % Trifluoropropyl - 50 % Methylpolysiloxane
- USP Phase G6
- Medium Polarity
- Cross-Linked
- Excellent Separation for Organophosphorous Pesticides
- Equivalents:DB-210, Rtx-200, VF-200ms

InertCap 210 is a medium polar column bonded 50 % trifluoropropyl and 50 % methylpolysiloxane. With a unique selectivity against polar compounds, InertCap 210 is suitable for analyses of such compounds containing phosphorous-nitrogen.

Structure



Organophosphorous Pesticides



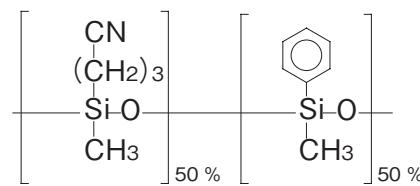
InertCap 210

I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.25 mm	30 m	0.25 μm	iso.240-prog.260 °C	1010-66142
0.32 mm	30 m	0.25 μm	iso.240-prog.260 °C	1010-66242
0.53 mm	15 m	1.00 μm	iso.220-prog.240 °C	1010-66425
	30 m	1.00 μm	iso.220-prog.240 °C	1010-66445

InertCap 225

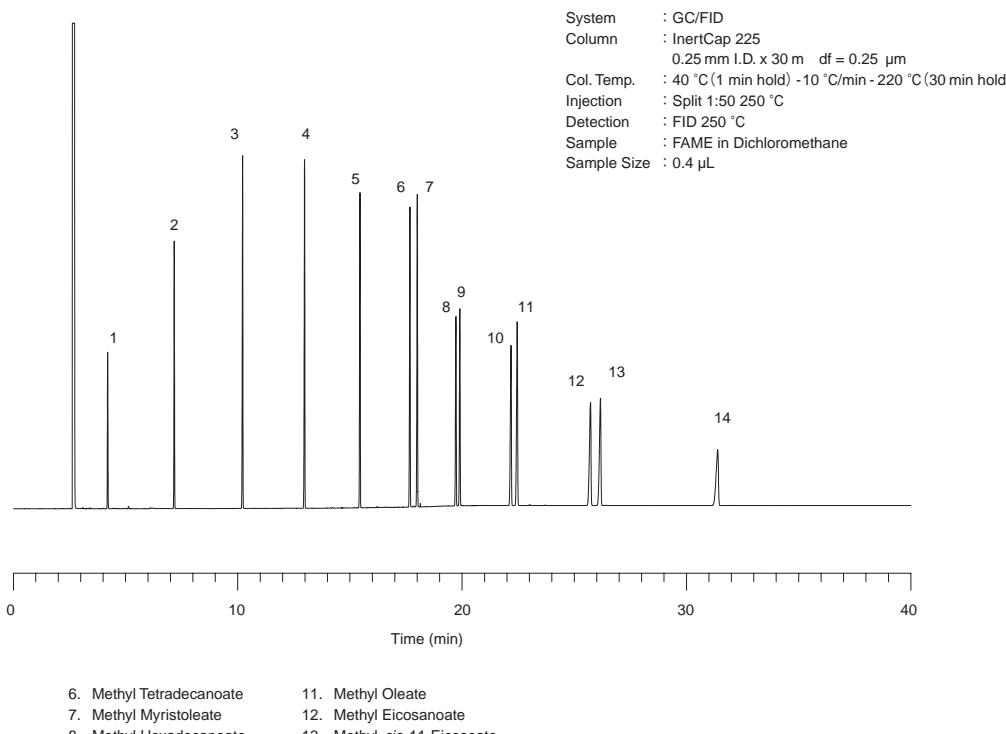
- 50 % Cyanopropylmethyl - 50 % Phenylmethylpolysiloxane
- USP Phase G19
- Medium Polarity
- Cross-Linked
- Excellent Separation for FAME
- Equivalents:DB-225, HP-225, Rtx-225, CP-Sil 43CB

Structure



InertCap 225 is a medium polar column bonded 50 % cyanopropylmethyl and 50 % phenylmethylpolysiloxane. Cyano group in the stationary phase includes triple bond and retains compounds stronger in accordance with the increase of the number of unsaturated bond by their dipole/dipole interactions. For that reasons InertCap 225 shows high separation efficiency for analyses of geometrical isomers.

FAME (Fatty Acid Methyl Esters)



InertCap 225

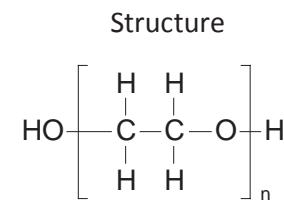
I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.25 mm	30 m	0.25 μm	iso.220-prog.240 °C	1010-66642
0.32 mm	30 m	0.25 μm	iso.220-prog.240 °C	1010-66742
0.53 mm	30 m	0.50 μm	iso.220-prog.240 °C	1010-66844

InertCap Pure-WAX

InertCap Pure-WAX

- Polyethylene Glycol (PEG)
- USP Phase G16
- High Polarity
- Cross-Linked
- Equivalents:DB-WAX, HP-INNOWax, Rtx-Wax, Stabilwax

InertCap Pure-WAX is a high polar column bonded polyethylene glycol. Based on newly developed inner treatment technology, InertCap Pure-WAX achieves the highest inertness among the market available columns. InertCap Pure-WAX is a optimal column for analyses of acidic compounds and basic compounds that commercially available WAX columns were not capable of analyzing.

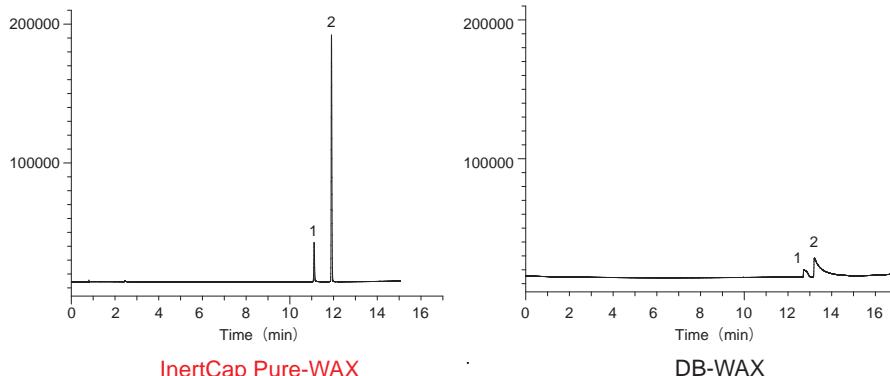


Comparison

Acidic Compounds

System : GC/FID
Column : 0.25 mm I.D. x 30 m df = 0.25 µm
Col.Temp. : 90 °C (5min hold) - 10 °C/min - 240 °C
Carrier Gas : He 100 kPa
Injection : Split flow 100 mL/min
 240 °C
Detection : FID Range 10⁰
 240 °C
Sample Size : 5 mg/mL 0.4 µL

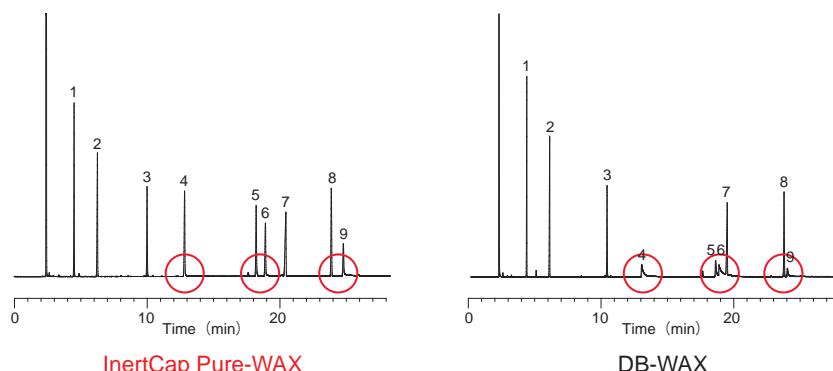
1. Acrylic acid
2. Methacrylic acid



Basic Compounds

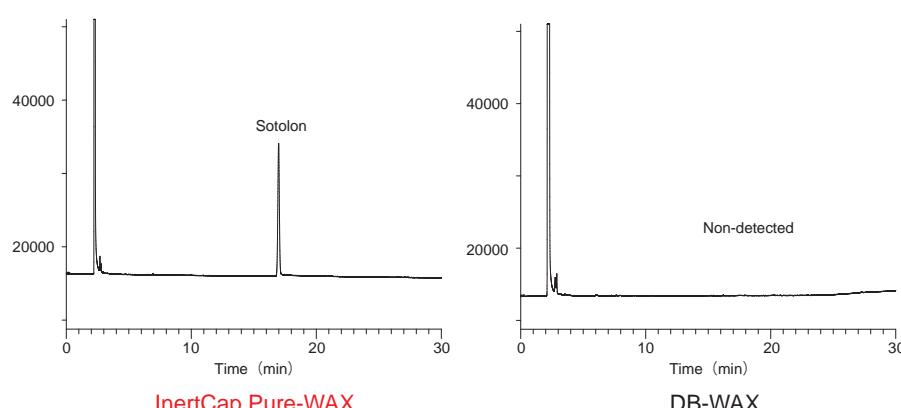
System : GC/FID
Column : 0.25 mm I.D. x 30 m df = 0.25 µm
Col. Temp. : 60 °C - 4 °C/min - 250 °C
Injection : 250 °C
Detection : 250 °C
Sample Size : 0.1 mg/mL in Methanol 0.2 µL

1. n-Undecane
2. n-Dodecane
3. 4,6-Dimethylpyrimidine
4. 1-Aminoctane
5. N,N-Dicyclohexylamine
6. 1-Aminododecane
7. n-Heptadecane
8. 2,6-Dimethylaniline
9. 1-Aminododecane



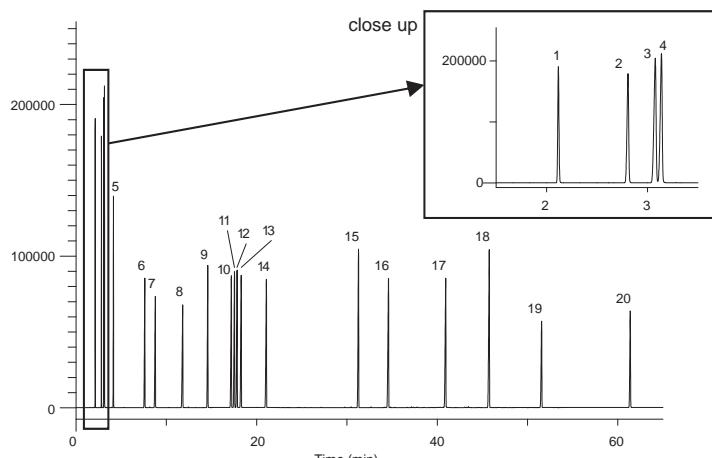
Chelating Compounds

System : GC/FID
Column : 0.25 mm I.D. x 30 m df = 0.25 µm
Col. Temp. : 160 °C Isothermal
Carrier Gas : He 100 kPa
Injection : Split flow 50 mL/min
 240 °C
Detection : FID Range 10⁰
 240 °C
Sample Size : 1 mg/mL in Ethanol
 1 µL



InertCap Pure-WAX

Flavor



System : GC/FID
 Column : InertCap Pure-WAX
 I.D. : 0.25 mm I.D. x 30 m df = 0.25 µm
 Col. Temp. : 40 °C(5 min hold) - 3 °C/min - 250 °C
 Carrier Gas : He 100 kPa
 Injection : Split flow 150 mL/min
 260 °C
 Detection : FID Range 10^1
 260 °C
 Sample Size : Mixed evenly
 0.3 µL

1. Propionaldehyde
 2. Ethyl acetate
 3. 2-Methylbutyraldehyde
 4. Isovaleraldehyde
 5. n-Valeraldehyde
 6. 3-Methyl-2-butanol
 7. 2-Pentanol
 8. Isoamyl propionate
 9. 2-Methylpyrazine
 10. 2,5-Dimethylpyrazine
 11. 2,6-Dimethylpyrazine
 12. 2-Ethylpyrazine
 13. 2,3-Dimethylpyrazine
 14. 2-Ethyl-3-methylpyrazine
 15. Acetophenone (Acetylbenzene)
 16. 5,6,7,8-Tetrahydroquinoline
 17. Isobutyl phenyl acetate
 18. 6-Methylquinoline
 19. Piperonal
 20. Vanillin

InertCap Pure-WAX

I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.25 mm	30 m	0.25 µm	iso.260-prog.260 °C	1010-68142
		0.50 µm	iso.260-prog.260 °C	1010-68144
	60 m	0.25 µm	iso.260-prog.260 °C	1010-68162
		0.50 µm	iso.260-prog.260 °C	1010-68164
0.32 mm	30 m	0.25 µm	iso.260-prog.260 °C	1010-68242
		0.50 µm	iso.260-prog.260 °C	1010-68244
	60 m	0.25 µm	iso.260-prog.260 °C	1010-68262
		0.50 µm	iso.260-prog.260 °C	1010-68264
0.53 mm	15 m	1.00 µm	iso.240-prog.240 °C	1010-68425
	30 m	1.00 µm	iso.240-prog.240 °C	1010-68445
	60 m	1.00 µm	iso.240-prog.240 °C	1010-68465

InertCap Pure-WAX ProGuard (Built-in Guard Column)

I.D.	Length	Thickness	Guard Column Length	Max. Temperature	Cat.No.
0.25 mm	30 m	0.25 µm	2 m	iso.260-prog.260 °C	1010-68490
			5 m	iso.260-prog.260 °C	1010-68491
			10 m	iso.260-prog.260 °C	1010-68494

InertCap Pure-WAX T.L. (Built-in Transfer Line)

I.D.	Length	Thickness	Transfer Line Length	Max. Temperature	Cat.No.
0.25 mm	30 m	0.25 µm	2 m	iso.260-prog.260 °C	1010-68492
	60 m	0.25 µm	2 m	iso.260-prog.260 °C	1010-68493

InertCap Pure-WAX Fast GC

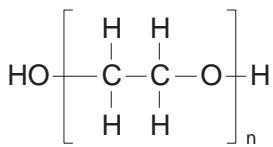
I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.18 mm	20 m	0.18 µm	iso.260-prog.260 °C	1010-68031
	40 m	0.18 µm	iso.260-prog.260 °C	1010-68051

InertCap WAX

InertCap WAX

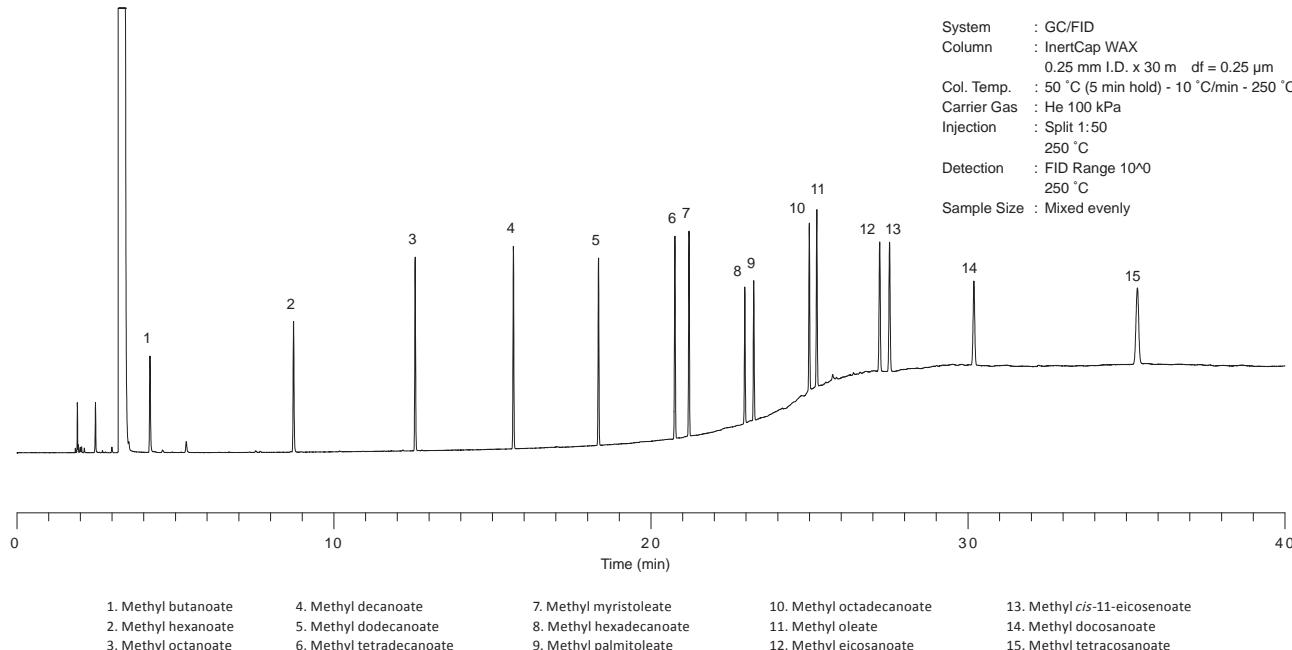
- Polyethylene Glycol (PEG)
- USP Phase G16
- High Polarity
- Cross-Linked
- Equivalents:DB-WAX, HP-INNOWax, Rtx-Wax, Stabilwax

Structure



InertCap WAX is a high polar column bonded polyethylene glycol. With a slightly higher polarity than InertCap Pure-WAX, InertCap WAX demonstrates high separations. It is optimal for analyses of high polar samples such as solvents.

Fatty Acid Methyl Esters (FAME)



InertCap WAX

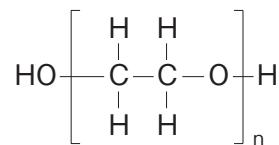
I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.25 mm	15 m	0.25 μm	iso.250-prog.260 °C	1010-67122
	30 m	0.25 μm	iso.250-prog.260 °C	1010-67142
		0.50 μm	iso.250-prog.260 °C	1010-67144
	60 m	0.25 μm	iso.250-prog.260 °C	1010-67162
		0.50 μm	iso.250-prog.260 °C	1010-67164

I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.32 mm	15 m	0.25 μm	iso.250-prog.260 °C	1010-67222
	30 m	0.25 μm	iso.250-prog.260 °C	1010-67242
		0.50 μm	iso.250-prog.260 °C	1010-67244
	60 m	0.25 μm	iso.250-prog.260 °C	1010-67262
		0.50 μm	iso.250-prog.260 °C	1010-67264
		1.00 μm	iso.230-prog.240 °C	1010-67265
0.53 mm	15 m	1.00 μm	iso.230-prog.240 °C	1010-67425
		2.00 μm	iso.230-prog.240 °C	1010-67427
	30 m	1.00 μm	iso.230-prog.240 °C	1010-67445
		2.00 μm	iso.230-prog.240 °C	1010-67447
		3.00 μm	iso.230-prog.240 °C	1010-67449
	60 m	1.00 μm	iso.230-prog.240 °C	1010-67465

InertCap WAX-HT

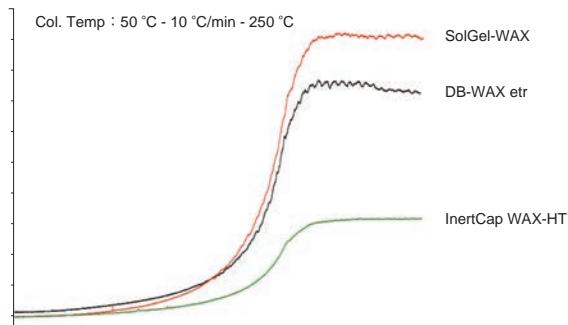
- Polyethylene Glycol (PEG)
- USP Phase G16
- High Polarity
- Cross-Linked
- Equivalents:DB-WAXetr, SolGel-WAX

Structure



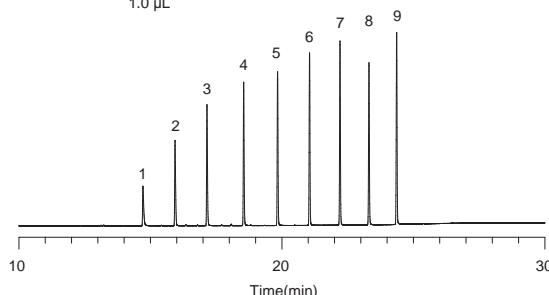
InertCap WAX-HT is a strong polar column bonded polyethylene glycol. By increasing the heat resistance of stationary phase, InertCap WAX-HT achieves the practical use of the maximum temperature 280 °C. Being optimal for the analyses of polar samples such as solvents, InertCap WAX-HT also available for the analyses of high-boiling compounds.

Comparison of Column Bleeding



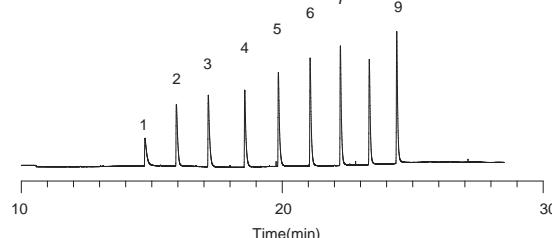
Short-chain Fatty Acids

System : GC/FID
 Column : InertCap WAX-HT 0.25 mm I.D. x 30 m df = 0.25 µm
 Col. Temp. : 40 °C (5min hold) -10 °C/min-240 °C
 Carrier Gas : He 100 kPa
 Injection : Split flow 50 mL/min 240 °C
 Detection : FID Range 10^4 240 °C
 Sample Size : 1000 µg/mL in Acetone
 1.0 µL



InertCap WAX-HT

1. Acetic Acid
2. Propionic Acid
3. Butyric Acid
4. Valeric Acid
5. Caproic Acid
6. Heptyric Acid
7. Caprylic Acid
8. Pelargonic Acid
9. Capric Acid



SolGel-WAX

InertCap WAX-HT

I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.25 mm	30 m	0.25 µm	iso.270-prog.280 °C	1010-68542
		0.50 µm	iso.260-prog.270 °C	1010-68544
	60 m	0.25 µm	iso.270-prog.280 °C	1010-68562
		0.50 µm	iso.260-prog.270 °C	1010-68564

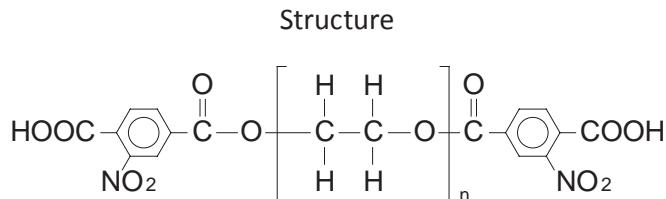
I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.32 mm	30 m	0.25 µm	iso.270-prog.280 °C	1010-68642
		0.50 µm	iso.260-prog.270 °C	1010-68644
	60 m	0.25 µm	iso.270-prog.280 °C	1010-68662
		0.50 µm	iso.260-prog.270 °C	1010-68664
0.53 mm	15 m	1.00 µm	iso.250-prog.260 °C	1010-68725
	30 m	1.00 µm	iso.250-prog.260 °C	1010-68745
	60 m	1.00 µm	iso.250-prog.260 °C	1010-68765

InertCap FFAP

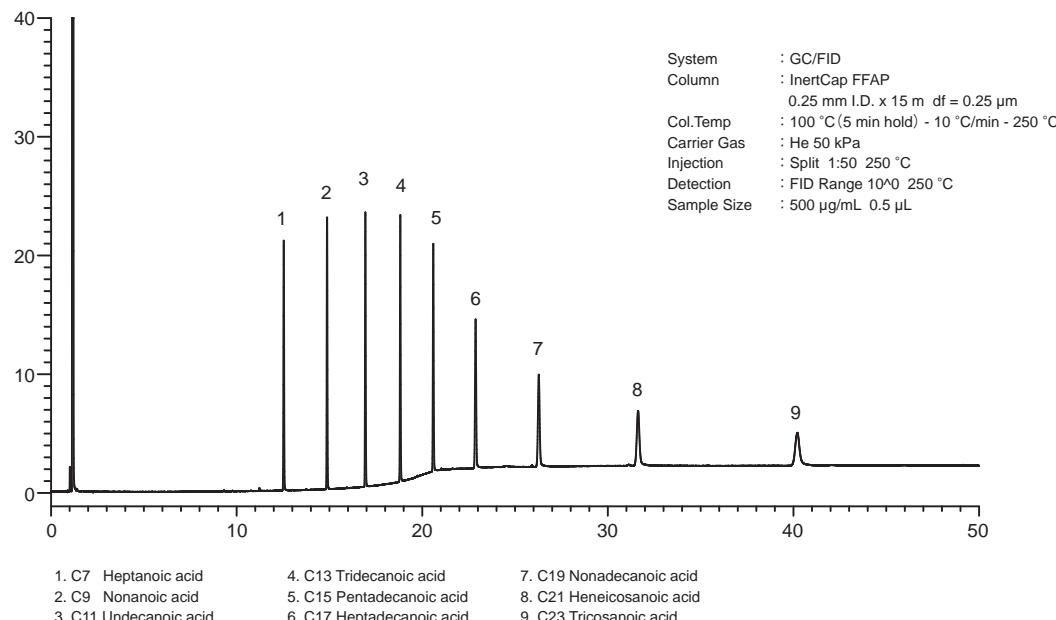
InertCap FFAP

- Nitroterephthalic Acid Modified Polyethylene Glycol
- USP Phase G35
- High Polarity
- Cross-Linked
- Equivalents:DB-FFAP, HP-FFAP, CP-WAX 58 (FFAP) CB

InertCap FFAP is a high polar column bonded nitroterephthalic acid modified polyethylene glycol. As the liquid phase shows acidity, it is possible to analyze volatile fatty acids without a derivatization. InertCap FFAP is optimal for the analyses of acidic compounds.



Odd Free Fatty Acids



InertCap FFAP

I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.25 mm	15 m	0.25 µm	iso.240-prog.250 °C	1010-28622
	30 m	0.25 µm	iso.240-prog.250 °C	1010-28642
		0.50 µm	iso.240-prog.250 °C	1010-28644
	60 m	0.25 µm	iso.240-prog.250 °C	1010-28662
		0.50 µm	iso.240-prog.250 °C	1010-28664
0.32 mm	15 m	0.25 µm	iso.240-prog.250 °C	1010-28722
	30 m	0.25 µm	iso.240-prog.250 °C	1010-28742
		0.50 µm	iso.240-prog.250 °C	1010-28744
		1.00 µm	iso.230-prog.240 °C	1010-28745
	60 m	0.25 µm	iso.240-prog.250 °C	1010-28762
		0.50 µm	iso.240-prog.250 °C	1010-28764
		1.00 µm	iso.230-prog.240 °C	1010-28765
0.53 mm	15 m	0.50 µm	iso.240-prog.250 °C	1010-28924
		1.00 µm	iso.230-prog.240 °C	1010-28925
	30 m	0.25 µm	iso.240-prog.250 °C	1010-28942
		0.50 µm	iso.240-prog.250 °C	1010-28944
		1.00 µm	iso.230-prog.240 °C	1010-28945

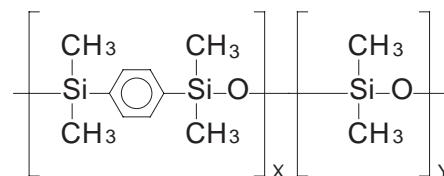
InertCap FFAP Fast GC

I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.18 mm	20 m	0.18 µm	iso.240-prog.250 °C	1010-28531
	40 m	0.18 µm	iso.240-prog.250 °C	1010-28551

InertCap Pesticides

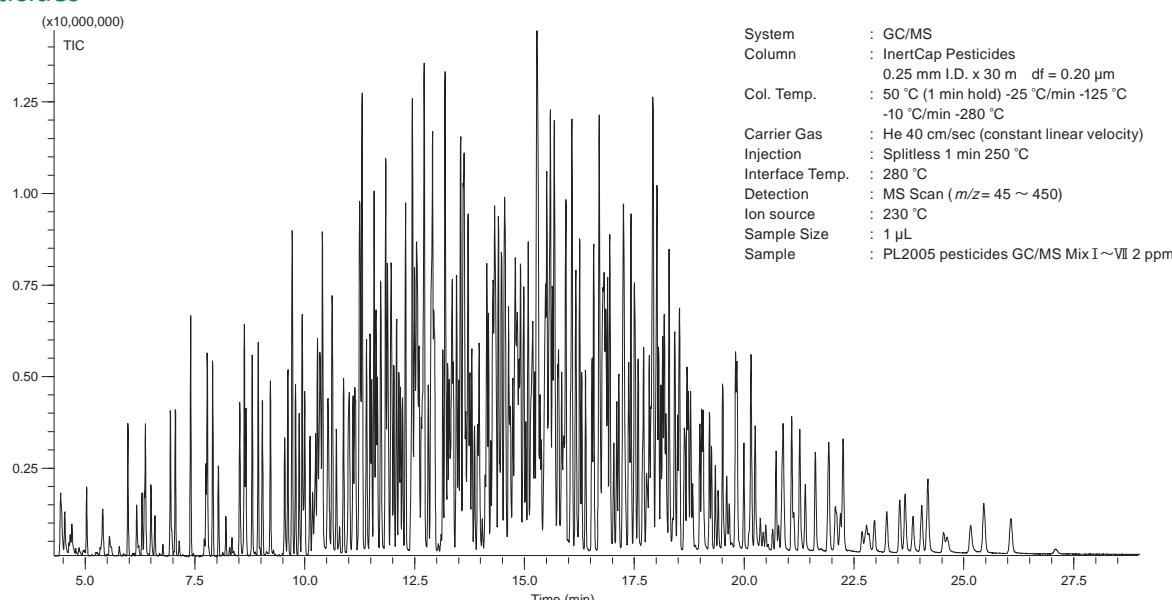
- 5 % Diphenyl (equiv.) – 95 % Dimethylpolysilphenylene Siloxane
- USP Phase G27
- Low Polarity
- Cross-Linked
- Ultra Low Bleed
- No equivalent

Structure



InertCap Pesticides is specially designed for simultaneous analyses of pesticides with GC/MS. Heat decomposition of pesticides in column and influence by matrix can be eliminated.

Pesticides



Note: About the sample details please see "GC Technical Note No.6" on our website.

InertCap Pesticides

I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.25 mm	30 m	0.20 µm	iso.325-prog.350 °C	1010-15141

InertCap Pesticides ProGuard (Built-in Guard Column)

I.D.	Length	Thickness	Guard Column Length	Max. Temperature	Cat.No.
0.25 mm	30 m	0.20 µm	2 m	iso.325-prog.350 °C	1010-15175
			5 m	iso.325-prog.350 °C	1010-15176
			10 m	iso.325-prog.350 °C	1010-15177

InertCap Pesticides T.L. (Built-in Transfer Line)

I.D.	Length	Thickness	Transfer Line Length	Max. Temperature	Cat.No.
0.25 mm	30 m	0.20 µm	2 m	iso.325-prog.350 °C	1010-15191

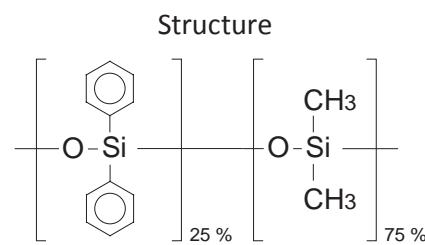
InertCap AQUATIC

InertCap AQUATIC

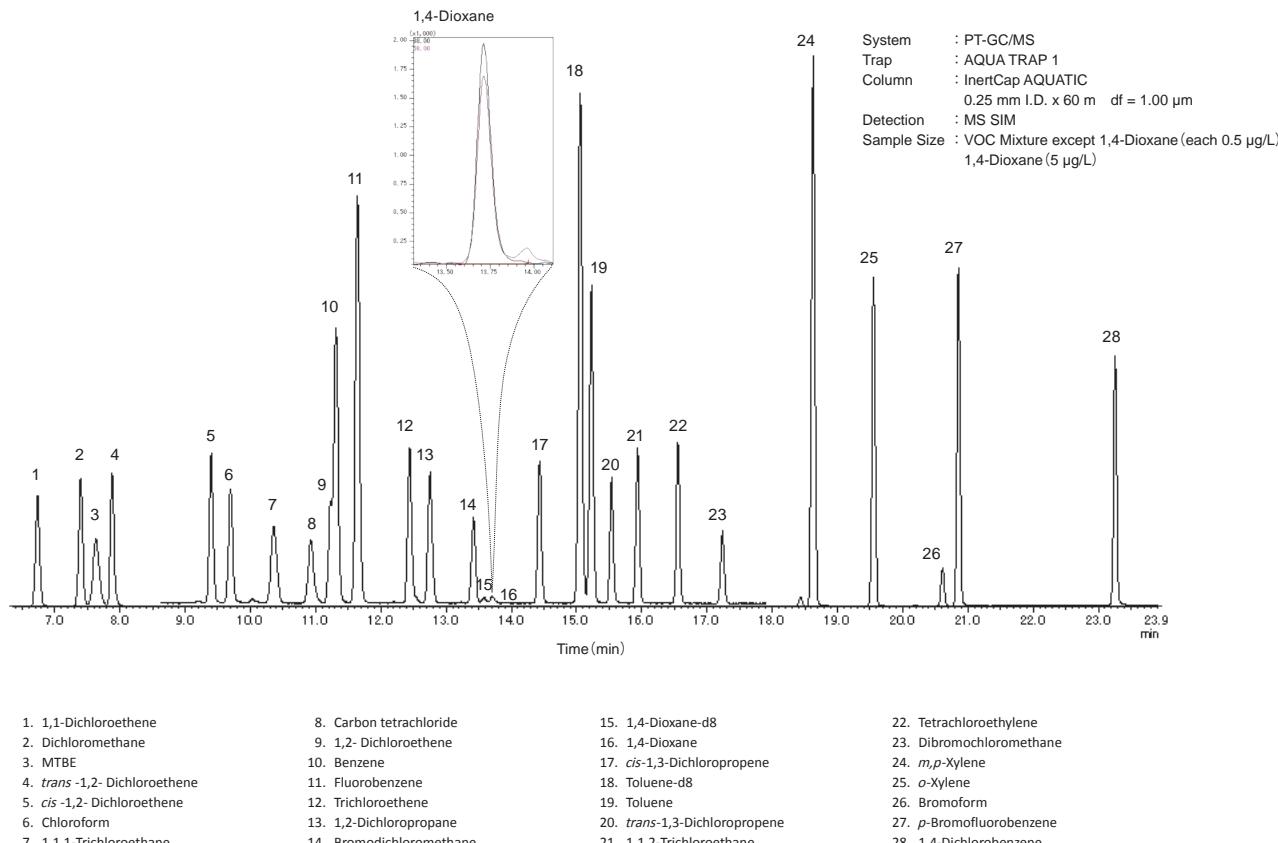
- 25 % Diphenyl – 75 % Dimethylpolysiloxane
- USP Phase G28
- Medium Polarity
- Cross-Linked
- No Equivalent

AQUATIC is a medium polar column bonded 25 % diphenyl – 75 % dimethylpolysiloxane, especially designed for the analyses of volatile organic compounds in water.

As the column polarity is optimized, AQUATIC enables high separations. Column performance report with analysis of 33 compounds is attached to every column which guarantee its significant separation efficiency and reproducibility. AQUATIC is suitable for VOCs simultaneous analyses by purge and trap.



Volatile Organic Compounds in Water



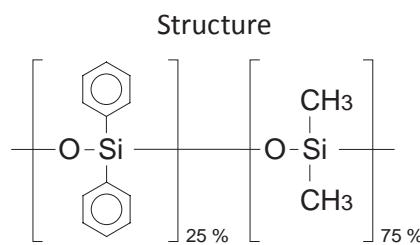
InertCap AQUATIC

I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.25 mm	30 m	1.00 µm	iso.200-prog.220 °C	1010-29145
	60 m	1.00 µm	iso.200-prog.220 °C	1010-29165
0.32 mm	60 m	1.40 µm	iso.200-prog.220 °C	1010-29266
0.53 mm	75 m	2.00 µm	iso.200-prog.220 °C	1010-29477

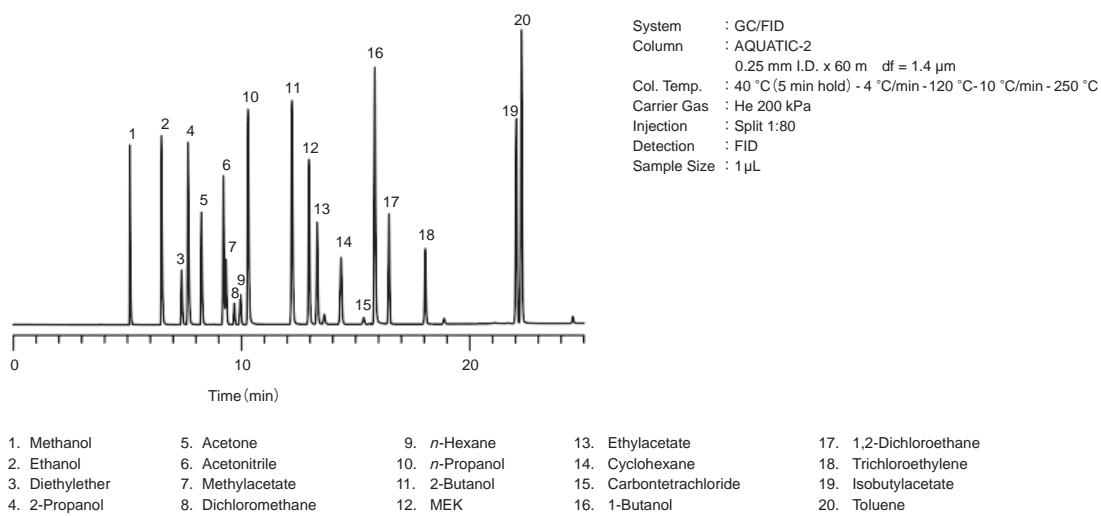
InertCap AQUATIC-2

- 25 % Diphenyl – 75 % Dimethylpolysiloxane
- USP Phase G28
- Medium Polarity
- Cross-Liked
- No Equivalent

AQUATIC-2 can be used up to 260 °C. Separation pattern is almost the same as AQUATIC. Selectivity to a few types of compounds may be slightly different from the AQUATIC.



20 Organic Solvents



InertCap AQUATIC-2

I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.25 mm	30 m	1.40 µm	iso.260-prog.260 °C	1010-19146
	60 m	1.40 µm	iso.260-prog.260 °C	1010-19166
0.32 mm	30 m	1.80 µm	iso.260-prog.260 °C	1010-19247
	60 m	1.80 µm	iso.260-prog.260 °C	1010-19267
0.53 mm	30 m	3.00 µm	iso.260-prog.260 °C	1010-19448
	75 m	3.00 µm	iso.260-prog.260 °C	1010-19478

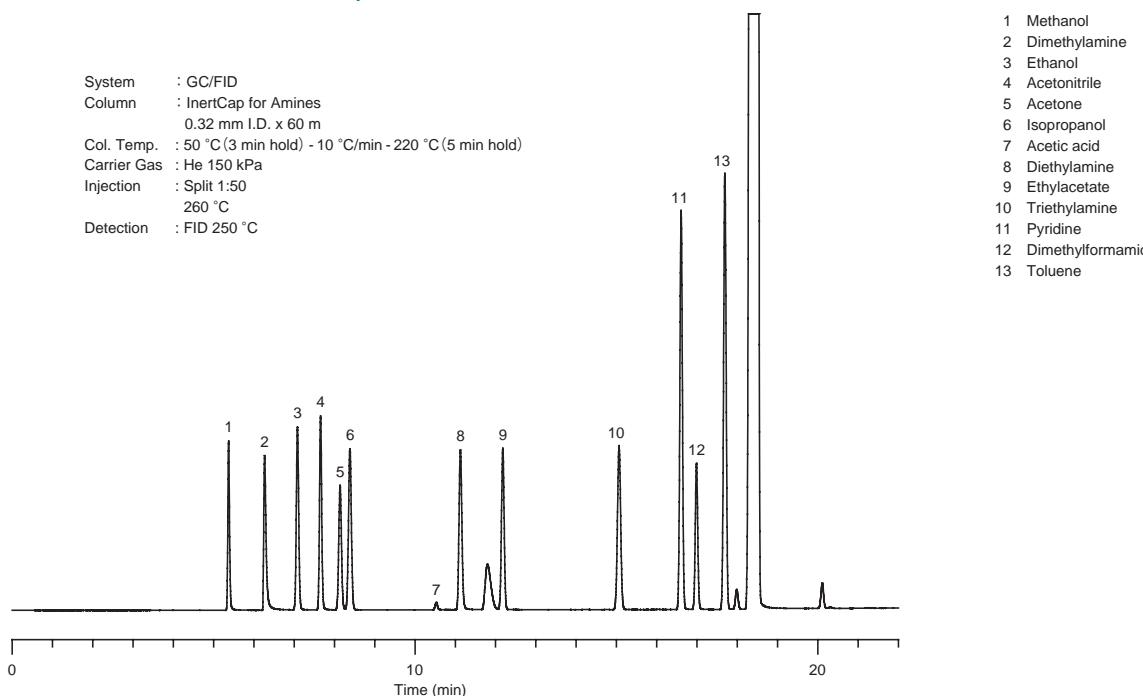
InertCap for Amines

InertCap for Amines

- Cross-Linked
- Optimized Performance for Analysis of Amines from C2 to C10
- Ideal for the simultaneous analyses of mixed sample such as alcohol etc.
- No Equivalent

InertCap for Amines shows excellent inertness and separation performances for analysis of amines from C2 to C10. Basic compounds can be perfectly eluted without adsorption from the column. Unlike other manufacturer's columns, InertCap for Amines can simultaneous analyze the other polar compounds such as alcohols due to our state-of-art inner column deactivation treatment techniques.

Solvent and Amine Mixture Analyses



InertCap for Amines

I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.32 mm	15 m	-	iso.265-prog.300 °C	1010-69229
	30 m	-	iso.265-prog.300 °C	1010-69249
	60 m	-	iso.265-prog.300 °C	1010-69269

InertCap CHIRAMIX

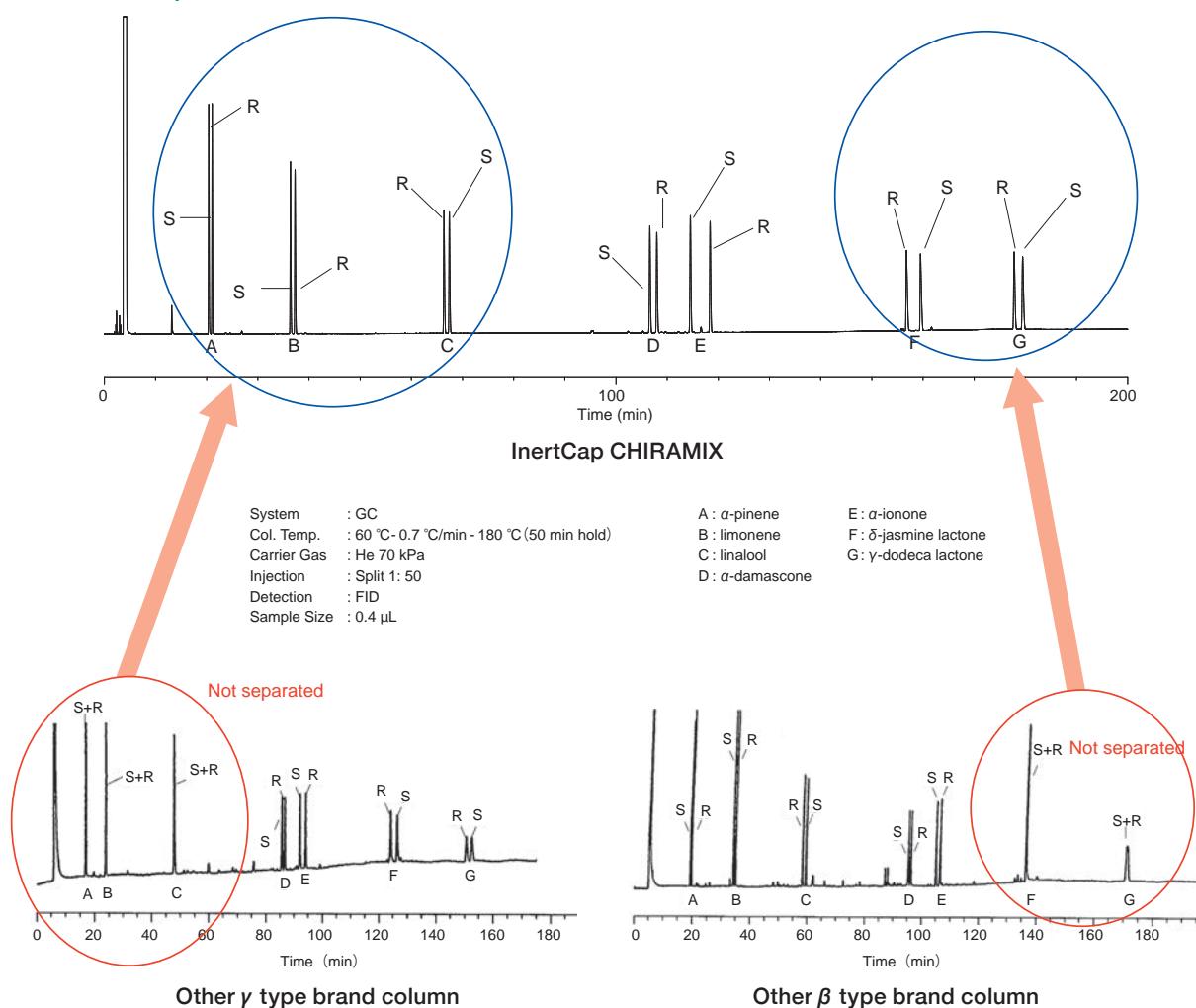
- Designed for excellent performance in separating enantiomers
- 2 or more cyclodextrin derivatives are used in the liquid phase
- Separating the targeted sample with a sharp peak
- GL Sciences' original, No equivalent

When analyzing enantiomers, it is basic to use several types of columns depending on the sample matrix. InertCap CHIRAMIX has an Optimized performance for separation of enantiomers coated with a mixture of cyclodextrin derivatives. Compared to the other commercially available columns which are coated with single cyclodextrin, InertCap CHIRAMIX can effectively separates a variety of enantiomers in a short time as the 1st choice column. To expedite the analysis, it is important to divide the enantiomers as much as possible in the first analytical column. InertCap CHIRAMIX can divide a wide range of enantiomers and is the best "first choice" column.

Note) InertCap CHIRAMIX was jointly developed with T. HASEGAWA CO., LTD.

Note) CHIRAMIX is a brand name of T. HASEGAWA CO., LTD.

Enantiomer Analysis



InertCap CHIRAMIX

I.D.	Length	Thickness	Max. Temperature	Cat.No.
0.25 mm	30 m	0.25 µm	iso.180-prog.200 °C	1010-69142

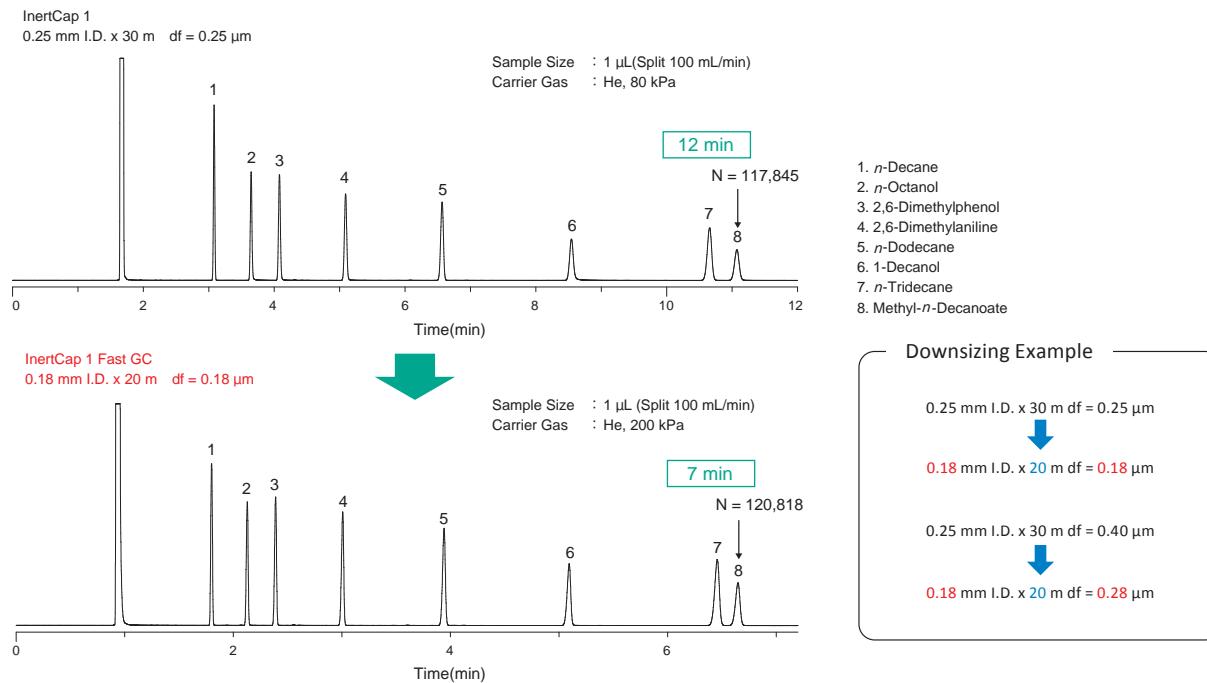
InertCap Fast GC Columns

InertCap Fast GC Columns



InertCap Fast GC is a column of I.D. 0.18 mm. Maintaining separation ability, InertCap Fast GC achieves fast analyses and best productivity with your existing GC instruments.

Shorten Analysis Time



InertCap Fast GC

Phase	I.D.	Length	Thickness	Max. Temperature	Cat.No.	
InertCap 1MS	0.18 mm	20 m	0.18 µm	iso.325-prog.350 °C	1010-12031	
InertCap 1		15 m	0.18 µm	iso.325-prog.350 °C	1010-11021	
			0.28 µm		1010-11022	
InertCap 5MS/Sil		20 m	0.18 µm	iso.325-prog.350 °C	1010-11031	
			0.28 µm		1010-11032	
InertCap 5MS	0.18 mm	20 m	0.18 µm	iso.325-prog.350 °C	1010-15031	
InertCap 5		40 m	0.18 µm	iso.325-prog.350 °C	1010-15051	
			0.18 µm	iso.325-prog.350 °C	1010-18021	
		15 m	0.28 µm	iso.325-prog.350 °C	1010-18022	
			0.28 µm		1010-18031	
InertCap 17	0.18 mm	20 m	0.18 µm	iso.320-prog.340 °C	1010-65031	
InertCap 1301		20 m	0.18 µm	iso.280-prog.300 °C	1010-60031	
InertCap 624	0.18 mm	20 m	1.00 µm	iso.260-prog.260 °C	1010-14535	
		40 m	1.00 µm	iso.260-prog.260 °C	1010-14555	
InertCap 1701	0.18 mm	20 m	0.18 µm	iso.280-prog.300 °C	1010-61031	
InertCap Pure-WAX	0.18 mm	20 m	0.18 µm	iso.260-prog.260 °C	1010-68031	
		40 m	0.18 µm	iso.260-prog.260 °C	1010-68051	
InertCap FFAP	0.18 mm	20 m	0.18 µm	iso.240-prog.250 °C	1010-28531	
		40 m	0.18 µm	iso.240-prog.250 °C	1010-28551	

Fused Silica Capillary Tubing



Guard Columns

Injecting samples with contaminants or nonvolatile compounds to a column causes active sites and/or degradation of the stationary phase. With the use of on-column and splitless injections, and even with split injection, contamination and degradation of the columns are unavoidable problem.

To protect a analytical column from such damages, it is effective to connect a 2 m fused silica deactivated capillary tubing to the inlet of the column and replace the tubing as the contaminants gets accumulated.

Retention Gap Columns

Retention gap is to help focus the compounds in large volume injected from the inlet to a tight band at the head of the analytical column in order to reduce peak broadening.

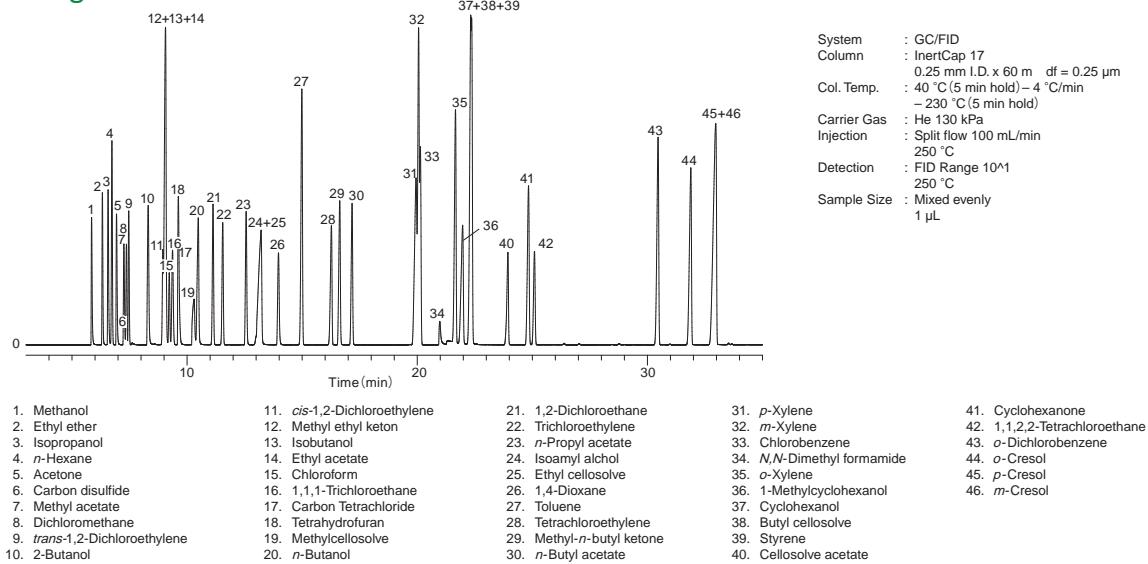
Transfer Line

A transfer line can be used for GC/MS, LC/MS, GC/FTIR, LC/GC, Multi-Dimensional GC, or sniffer adaptors.

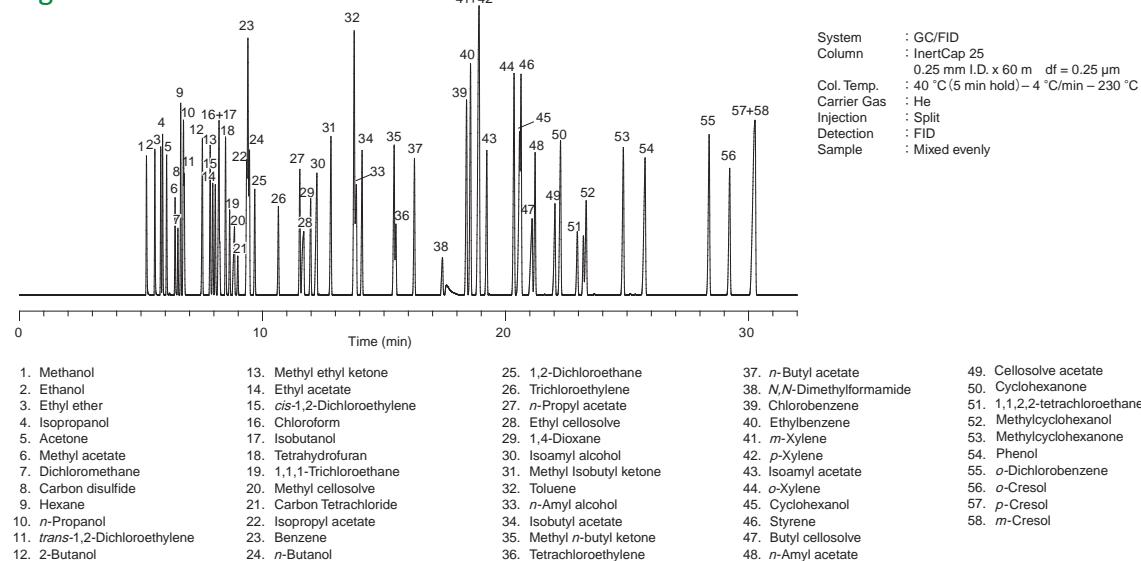
Deactivated Fused Silica Capillary Tubing

I.D.	O.D.	10 m	25 m	50 m
		Cat.No.	Cat.No.	Cat.No.
0.005 mm	0.15 mm	1010-35102	1010-35105	-
	0.375 mm	1010-35142	1010-35145	-
0.01 mm	0.15 mm	1010-35202	1010-35205	-
	0.375 mm	1010-35242	1010-35245	-
0.015 mm	0.15 mm	1010-35302	1010-35305	-
	0.375 mm	1010-35342	1010-35345	-
0.02 mm	0.15 mm	1010-35402	1010-35405	-
	0.375 mm	1010-35442	1010-35445	-
0.025 mm	0.15 mm	1010-35502	1010-35505	-
	0.375 mm	1010-35542	1010-35545	-
0.03 mm	0.15 mm	1010-35602	1010-35605	-
	0.375 mm	1010-35642	1010-35645	-
0.04 mm	0.15 mm	1010-35702	1010-35705	-
	0.375 mm	1010-35742	1010-35745	-
0.05 mm	0.15 mm	1010-35802	1010-35805	-
	0.375 mm	1010-35842	1010-35845	-
0.075 mm	0.15 mm	1010-35902	1010-35905	-
	0.375 mm	1010-35942	1010-35945	-
0.10 mm	0.20 mm	1010-36012	1010-36015	1010-36017
	0.375 mm	1010-36042	1010-36045	1010-36047
0.15 mm	0.375 mm	1010-36132	1010-36135	1010-36137
0.18 mm	0.35 mm	1010-36172	1010-36175	1010-36177
0.20 mm	0.35 mm	1010-36222	1010-36225	1010-36227
0.25 mm	0.35 mm	1010-36322	1010-36325	1010-36327
0.32 mm	0.45 mm	1010-36452	1010-36455	1010-36457
0.53 mm	0.66 mm	1010-36682	1010-36685	-

46 organic solvents



58 organic solvents



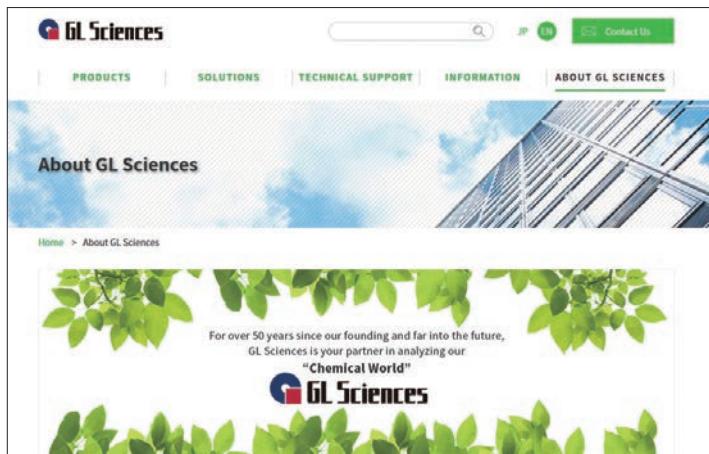
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■ Applications

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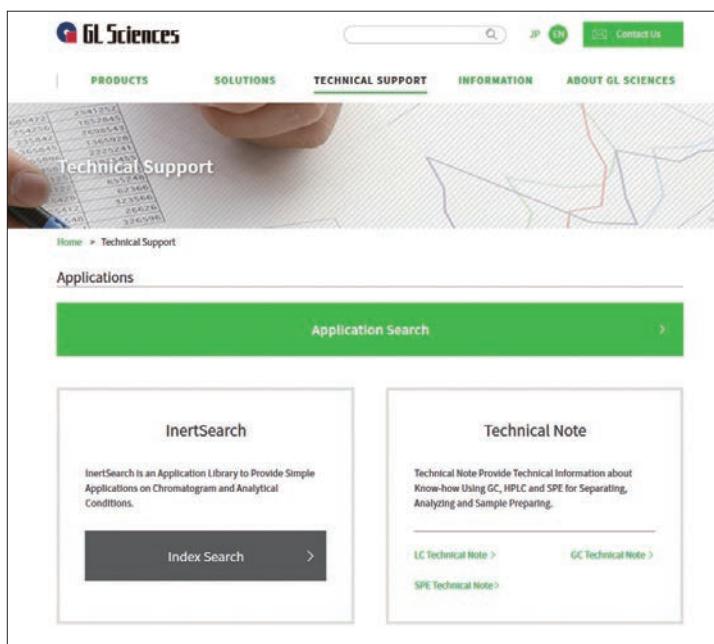


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Technical Note <https://www.globalsciences.com/technique/index.html>

"Technical Note" is a database of chromatographic results and useful information of various analyses. These files provide detailed explanation of each analysis which will help you greatly (e.g. method and instruction, chromatogram with analytic condition, chemical structure of compounds).





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