



Gas Chromatography Capillary Columns

InertCapTM



Ako nás možno kontaktovať:

AZ Chrom s.r.o.
Robotnícka 10
831 03 Bratislava
Tel. 0907 244526
Fax. 02 20715811
azetchrom@hplc.sk
www.azetchrom.sk



GL Sciences Inc.

Contents

● Overview	Ex 2
● ISO Certificate	Ex 3
● Features of InertCap	Ex 4
● Quality Assurance.....	Ex 5
● InertCap Product Line.....	Ex 6
● Capillary Column Phase Cross References	Ex 7
● JIS Codes	Ex 8
● GL Sciences' Recommendations	Ex 9
● Food(Positive List System)	Ex 10
● USP (US Pharmacopeia) / JP (Japanese Pharmacopeia)	Ex 11
● EPA Method Codes.....	Ex 12
● ASTM Method Codes.....	Ex 14

GC Capillary Columns

● InertCap™ 1MS	002
● InertCap™ 1	003
● InertCap™ 5MS/Sil	004
● InertCap™ 5MS/NP	006
● InertCap™ 5	007
● InertCap™ Pesticides	008
● InertCap™ 624	009
● InertCap™ 1301	010
● InertCap™ 25.....	011
● InertCap™ 35.....	012
● InertCap™ 1701	013
● InertCap™ 17MS.....	014
● InertCap™ 17.....	015
● InertCap™ 210	016
● InertCap™ 225	017
● InertCap™ Pure-WAX	018
● InertCap™ WAX.....	020
● InertCap™ WAX-HT	021
● InertCap™ FFAP	022
● InertCap™ Fast GC Column.....	023

Special Columns•Other Columns

● InertCap™ for Amines.....	026
● InertCap CHIRAMIX™	027
● AQUATIC	028
● AQUATIC-2	029
● Tailor made Column	030
● Built-in Guard Column & Transfer Line Column	032

GC Capillary Columns	01
Special Columns Other Columns	25
GC Accessories	33
Applications	49
GC Accessories	01
Leak Detector	034
Capillary Cutter/Union	035
Carrier Gas Purifier	039
Guard Column•Retention Gap Column	040
GC Consumables	
Agilent	042
Shimadzu	044
Thermo Scientific	046
Varian	048
Applications	050

Overview



G-Scot Glass Capillary Columns
Stainless Capillary Columns

1975

Fused Silica Capillary Columns

1980

Cross-Link Capillary Column

1983

NB Series
TC Series

1990

Ultra Inert Column
InertCap Series

2003

Built in Guard Column
InertCap ProGuard Series

2010

ISO Certificate

GL Sciences Inc. is certified for ISO 14001.



GL Sciences Inc. recognizes that the global environmental protection is one of the most important issues to all humankind and that it is essential for companies to try to reduce the environmental burden in order to continue and grow. We contribute to realize a better society through the global environmental protection conscious cooperate activities.

The Fukushima factory is certified for ISO 9001.



GL Sciences Inc. Fukushima factory obtained an International Organization for Standardization ISO 9001: 2008 for quality management system to design, produce and supply instruments, parts, peripheral devices, columns, bulk materials, reagents and spectroscopic cells for gas chromatography and liquid chromatography.



■General Technical Center



■Fukushima Factory

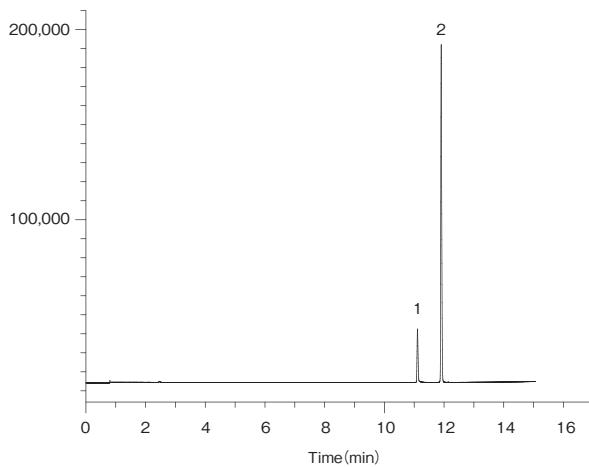


Features of InertCap

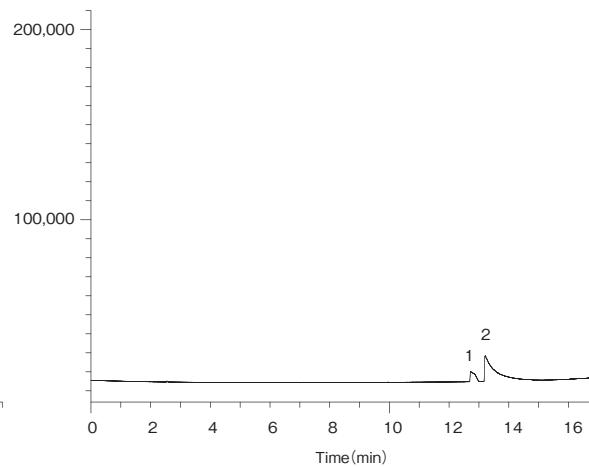
High inertness

Our unique inner surface deactivation technology radically removes halogenated compounds, silanol groups, and the residual metals on the inner surface. It gives an excellent peak symmetry to highly adsorptive polar, acidic, basic, and metal coordination compounds.

Highly adsorptive samples



InertCap Pure-WAX



DB-WAX

System : GC/FID

Column : 0.25 mm I.D. × 30 m df = 0.25 μ m

Col.Temp. : 90 °C (5 min hold)-10 °C/min-240 °C

Carrier Gas : He 100 kPa

Injection : Split Flow 100 mL/min 240 °C

Detection : FID Range10°0 240 °C

Sample Size : 0.4 μ L 5 mg/mL

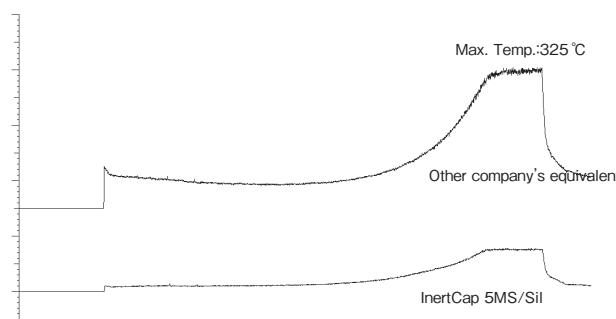
1. Acrylic acid

2. Methacrylic acid

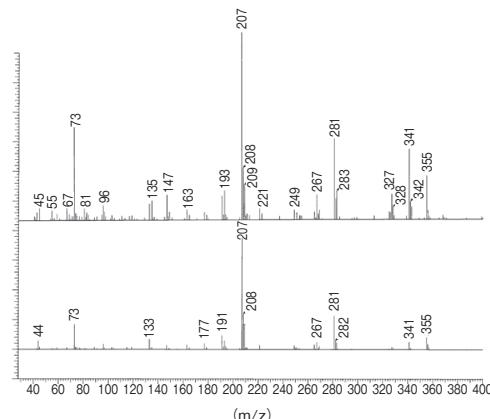
Low bleed

It is important to select a column with low bleed for GC/MS analyses in order to improve the S/N ratio and detection limit, and avoid the contamination of the MS parts. The level of the column bleed will affect the sensitivity of any MS. As the level of the column bleed increases, the signal and the sensitivity surely degrade. The cause of bleed is the elution of cyclo-siloxanes, m/z 207 for example from the phase. InertCap for GC/MS columns realize an extreme low bleed due to our superior polymerization technology.

Bleeding comparison



Spectral intensity



Quality assurance

InertCap columns are rigorously tested. We use a variety of easily-absorbed samples, such as alcohols, diols, phenols, and primary amines at an ISO9001 certified factory in Japan.

Inspection samples and articles

(Ex: InertCap 1MS)

- ①Retention coefficient (k')
- ②Theoretical plate number (N)
- ③n-Decylamine (basic compounds adsorption)
- ④2,4,5-Trichlorophenol (acidic compounds adsorption)
- ⑤Naphthalene (metal coordination adsorption)
- ⑥n-Nonanol (residual silanol)
- ⑦Baseline by temperature increase (bleed value)

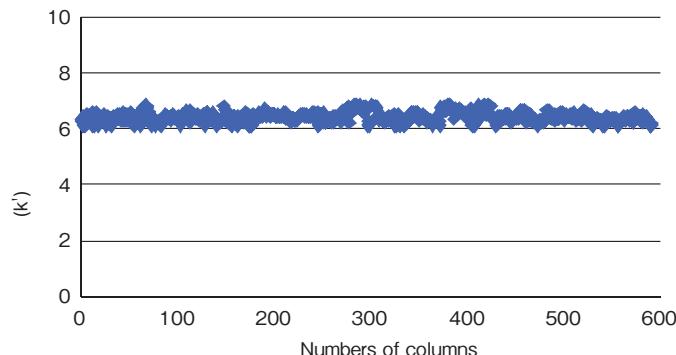
Product stability

Retention coefficient (k') is one of the crucial factors to inspect the batch-to-batch stability of columns. The retention coefficient of InertCap has been always >2.0% on the CV value since its release and offering the stable columns for the customers.

$$k' = (t_1 - t_0) / t_0$$

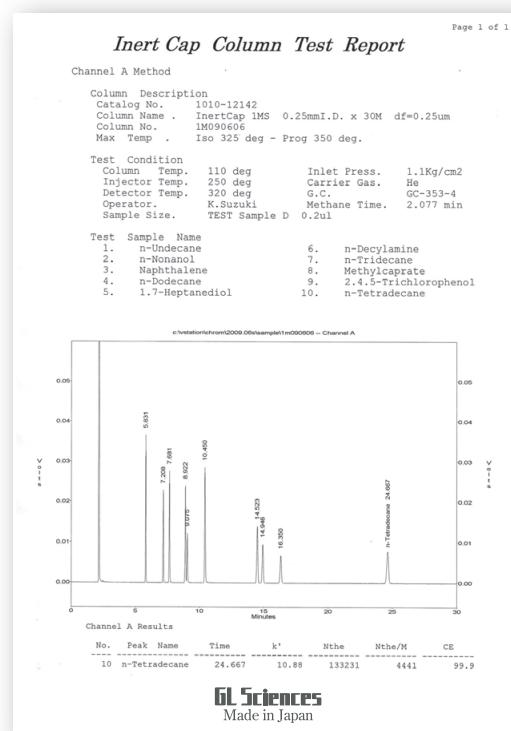
t_1 : Retention time of targeted compounds

t_0 : Gases that are not retained



Inspection report

Every InertCap column will be shipped with an individual inspection report.



InertCap Product Line

Phase	Phase Composition	USP Code	Polarity	Application
InertCap 1MS	100 % Methylpolysiloxane	G2	Non	General purpose, Hydrocarbons, PCB, High Volatile solvents, Phenols
InertCap 1	100 % Methylpolysiloxane	G2	Non	General purpose, Hydrocarbons, PCB, High Volatile solvents, Phenols
InertCap 5MS/Sil	Phenyl Arylene polymer equivalent to a 5 % Phenyl - 95 % Methylpolysiloxane	G27	Slightly Polar	General purpose, Halogenated compounds, Phenols, Pesticides, FAME
InertCap 5MS/NP	5 % Phenyl 95 % Methylpolysiloxane	G27	Slightly Polar	General purpose, Halogenated compounds, Phenols, Pesticides, FAME
InertCap 5	5 % Phenyl 95 % Methylpolysiloxane	G27	Slightly Polar	General purpose, Halogenated compounds, Phenols, Pesticides, FAME
InertCap Pesticides	Phenyl Arylene polymer equivalent to a 5 % Phenyl - 95 % Methylpolysiloxane	G27	Slightly Polar	Pesticides screening
InertCap 624	6 % Cyanopropylphenyl 94 % Methylpolysiloxane	G43	Medium Polar	VOC, Alcohol
InertCap 1301	6 % Cyanopropylphenyl 94 % Methylpolysiloxane	G43	Medium Polar	Pesticides, PCB, Alcohol, VOC
InertCap 25	25 % Phenyl 75 % Methylpolysiloxane	G28	Medium Polar	Pesticides, PCB, Alcohol, VOC
InertCap 35	35 % Phenyl 65 % Methylpolysiloxane	G42	Medium Polar	Pesticides, Amines, Drugs, PCB
InertCap 1701	14 % Cyanopropylphenyl 86 % Methylpolysiloxane	G46	Medium Polar	Sugars, TMS derivatives, Drugs, Alcohol, Steroids
InertCap 17MS	50 % Phenyl 50 % Methylpolysiloxane	G3	Medium Polar	Steroids, Drugs, Pesticides
InertCap 17	50 % Phenyl 50 % Methylpolysiloxane	G3	Medium Polar	Steroids, Drugs, Pesticides
InertCap 210	50 % Trifluoropropyl 50 % Methylpolysiloxane	G6	Medium Polar	Organophosphorus acids
InertCap 225	50 % Cyanopropylmethyl 50 % Phenylmethylpolysiloxane	G19	Medium Polar	FAME
InertCap Pure-WAX	Polyethylene Glycol	G16	Polar	General purpose, Esters, Perfumes, Alcohol, Aromatic hydrocarbons, FAME
InertCap WAX	Polyethylene Glycol	G16	Polar	General purpose, Esters, Perfumes, Alcohol, Aromatic hydrocarbons, FAME
InertCap WAX-HT	Polyethylene Glycol	G16	Polar	General purpose, Esters, Perfumes, Alcohol, Aromatic hydrocarbons, FAME
InertCap FFAP	Nitrotetraphthalic acid modified Polyethylene Glycol	G35	Polar	FAME, Free fatty acids, Organic acids, Alcohol, Aldehydes

Special columns

Phase	Phase Composition	USP Code	Polarity	Application
InertCap for Amines	GL Sciences original	—	—	Amines, Alcohol
InertCap CHIRAMIX	GL Sciences original	—	—	Optical isomers
AQUATIC	25 % Phenyl 75 % Methylpolysiloxane	G28	Medium Polar	VOC, Organic solvents
AQUATIC-2	25 % Phenyl 75 % Methylpolysiloxane	G28	Medium Polar	VOC, Organic solvents

Capillary Column Phase Cross References

GL Sciences	Phase Composition	Similar Phases
InertCap 1MS	100 % Methylpolysiloxane	DB-1ms, HP-1ms, Rxi-1ms, VF-1ms, CP-Sil 5 CB Low Bleed/MS, ZB-1ms, TR-1MS, BPX1, Equity-1, 007-1
InertCap 1	100 % Methylpolysiloxane	DB-1, HP-1, ULTRA-1, Rtx-1, CP-Sil 5 CB, ZB-1, TR-1, BP1
InertCap 5MS/Sil	Phenyl Arylene polymer equivalent to a 5 % Phenyl - 95 % Methylpolysiloxane	DB-5ms, Rxi-5Sil MS, Rtx-5Sil MS, VF-5ms, ZB-5ms, TR-5MS, BPX5, SLB-5, 007-5MS, Optima-5ms, AT-5ms
InertCap 5MS/NP	5 % Phenyl 95 % Methylpolysiloxane	HP-5ms, Rxi-5ms, CP-Sil 8 CB Low Bleed/MS, ZB-5MSi, TR-5, BPX5, Equity-5, 007-5, AT-5ms
InertCap 5	5 % Phenyl 95 % Methylpolysiloxane	DB-5, HP-5, ULTRA-2, Rtx-5, CP-Sil 8 CB, ZB-5, TR-5, BP5, SPB-5, 007-5, Optima-5, AT-5
InertCap Pesticides	Phenyl Arylene polymer equivalent to a 5 % Phenyl - 95 % Methylpolysiloxane	—
InertCap 624	6 % Cyanopropylphenyl 94 % Methylpolysiloxane	DB-624, Rtx-624, VF-624ms, CP-Select 624 CB, ZB-624, BP624, 007-624, Optima-624, AT-624
InertCap 1301	6 % Cyanopropylphenyl 94 % Methylpolysiloxane	HP-1301, Rtx-1301, VF-1301ms, CP-1301, SPB-1301, 007-1301, Optima-1301, AT-1301
InertCap 25	25 % Phenyl 75 % Methylpolysiloxane	—
InertCap 35	35 % Phenyl 65 % Methylpolysiloxane	HP-35, DB-35, Rtx-35, VF-35ms, ZB-35, TR-35MS, BPX35,SPB-35, 007-11, AT-35
InertCap 1701	14 % Cyanopropylphenyl 86 % Methylpolysiloxane	DB-1701, Rtx-1701, VF-1701ms, CP-Sil 19 CB, ZB-1701, TR-1701, BP10 (1701), SPB-1701, 007-1701, Optima-1701, AT-1701
InertCap 17MS	50 % Phenyl 50 % Methylpolysiloxane	HP-17, DB-17ms, Rxi-17, VF-17ms, CP-Sil 24 CB Low Bleed/MS, ZB-50, TR-50MS, BPX50 . AT-50
InertCap 17	50 % Phenyl 50 % Methylpolysiloxane	DB-17, HP-50, Rtx-50, CP-Sil 24 CB, ZB-50, SPB-50, 007-17,Optima-17, AT-50ms
InertCap 210	50 % Trifluoropropyl 50 % Methylpolysiloxane	DB-210, DB-200, Rtx-200, VF-200ms, 007-210, Optima-210, AT-210
InertCap 225	50 % Cyanopropylmethyl 50 % Phenylmethylpolysiloxane	DB-225, Rtx-225, CP-Sil 43 CB, BP225, 007-225, Optima-225, AT-225
InertCap Pure-WAX	Polyethylene Glycol (PEG)	DB-WAX, HP-INNOWAX, Rtx-Wax, Stabilwax, CP-Wax 52 CB, ZB-Wax, TR-WAX, BP20 (WAX), Supelcowax-10, 007-CW, Optima Wax, AT-Wax
InertCap WAX	Polyethylene Glycol (PEG)	DB-WAX, HP-INNOWAX, Rtx-Wax, Stabilwax, CP-Wax 52 CB, ZB-Wax, TR-WAX, BP20 (WAX), Supelcowax-10, 007-CW, Optima Wax, AT-Wax
InertCap WAX-HT	Polyethylene Glycol (PEG)	DB-WAX, HP-INNOWAX, Rtx-Wax, Stabilwax, CP-Wax 52 CB, ZB-Wax, TR-WAX, Solgel WAX, Supelcowax-10, 007-CW, Optima Wax, AT-Wax
InertCap FFAP	Nitrotetraphthalic acid modified Polyethylene Glycol	DB-FFAP, HP-FFAP, Stabilwax-DA, CP-WAX 58 CB, ZB-FFAP, BP21 (FFAP), 007-FFAP, Optima FFAP, Permabond FFAP, AT-AQUAWAX-DA, AT-1000, EC-1000
InertCap for Amines	GL Sciences original	CP-Volamine
InertCap CHIRAMIX	GL Sciences original	—
AQUATIC	25 % Phenyl 75 % Methylpolysiloxane	—
AQUATIC-2	25 % Phenyl 75 % Methylpolysiloxane	—

JIS Codes

Code	Description	Phase	Column Size	Cat.No.
K 0088	Methods for determination of benzene in flue gas	InertCap 1 InertCap 5	0.25 mm I.D. × 60 m df = 0.40 µm 0.25 mm I.D. × 60 m df = 0.40 µm	GC11163 GC18163
K 0089	Methods for determination of acrolein in flue gas	InertCap Pure-WAX InertCap WAX	0.32 mm I.D. × 60 m df = 0.50 µm	GC68264 GC67264
K 0093	Methods for determination of polychlorinated biphenyl in industrial waste water	InertCap 1 InertCap 5	0.25 mm I.D. × 60 m df = 0.25 µm 0.25 mm I.D. × 60 m df = 0.25 µm	GC11162 GC18162
K 0125	Testing methods for volatile organic compounds in industrial water and waste water	AQUATIC	0.25 mm I.D. × 60 m df = 1.00 µm	GC29165
K 0128	Testing methods for pesticides of industrial water and waste water	InertCap 1 InertCap 5	0.25 mm I.D. × 60 m df = 0.25 µm 0.25 mm I.D. × 60 m df = 0.25 µm	GC11162 GC18162
K 0303	Methods for determination of formaldehyde in flue gas	InertCap 1701	0.25 mm I.D. × 30 m df = 0.25 µm	GC61142
K 0305	Methods for determination of trichloroethylene and tetrachloroethylene in flue gas	AQUATIC	0.25 mm I.D. × 60 m df = 1.00 µm	GC29165
K 0450-10-10	Testing methods for bisphenol A in industrial water and waste water	InertCap 1	0.25 mm I.D. × 60 m df = 0.25 µm	GC11162
K 0450-20-10	Testing methods for alkyl phenol in industrial water and waste water	InertCap 1	0.25 mm I.D. × 60 m df = 0.25 µm	GC11162
K 0450-30-10	Testing methods for phthalic acid esters in industrial water and waste water	InertCap 1	0.25 mm I.D. × 60 m df = 0.25 µm	GC11162
K 1570	Test methods for determining the effectiveness of wood preservatives and their performance requirements	InertCap 5	0.32 mm I.D. × 30 m df = 0.25 µm	GC18242
K 2435	Benzene Toluene Xylene	InertCap Pure-WAX InertCap WAX	0.25 mm I.D. × 60 m df = 0.25 µm	GC68162 GC67162
K 2536-3	Liquid petroleum products - Testing method for components	InertCap Pure-WAX InertCap WAX	0.25 mm I.D. × 30 m df = 0.25 µm	GC68142 GC67142
K 6231	Rubber – Identification of polymers (single polymers and blends) – Pyrolytic gas chromatographic method	InertCap 5MS/Sil	0.25 mm I.D. × 30 m df = 1.00 µm 0.25 mm I.D. × 30 m df = 0.25 µm	GC15145 GC15142
K 8034	Acetone	InertCap 1	0.53 mm I.D. × 30 m df = 5.00 µm	GC11449
K 8040	Acetone for pesticide residue and polychlorinated biphenyl analysis	InertCap Pure-WAX InertCap WAX	0.25 mm I.D. × 30 m df = 0.25 µm	GC68142 GC67142
K 8093	Ethanol for pesticide residue and polychlorinated biphenyl analysis	InertCap Pure-WAX InertCap WAX	0.25 mm I.D. × 30 m df = 0.25 µm	GC68142 GC67142
K 8361	Ethyl acetate (Reagent)	InertCap 1	0.53 mm I.D. × 30 m df = 5.00 µm	GC11449
K 8461	1,4-Dioxane (Reagent)	InertCap 1	0.53 mm I.D. × 30 m df = 5.00 µm	GC11449
K 8500	N,N-Dimethylformamide (Reagent)	InertCap 1	0.53 mm I.D. × 30 m df = 5.00 µm	GC11449
K 8680	Toluene	InertCap 1	0.53 mm I.D. × 30 m df = 5.00 µm	GC11449
K 8698	1-Naphthol (Reagent)	InertCap 1	0.25 mm I.D. × 30 m df = 0.25 µm	GC11142
K 8699	2-Naphthol (Reagent)	InertCap 1	0.25 mm I.D. × 30 m df = 0.25 µm	GC11142
K 8810	1-Butanol (Reagent)	InertCap 1	0.53 mm I.D. × 30 m df = 5.00 µm	GC11449
K 8858	Benzene (Reagent)	InertCap 1	0.53 mm I.D. × 30 m df = 5.00 µm	GC11449
K 9032	Resorcinol (Reagent)	InertCap 1	0.25 mm I.D. × 30 m df = 0.25 µm	GC11142
A 1904	SVOC	InertCap 1MS InertCap 5MS/Sil	0.25 mm I.D. × 60 m df = 0.25 µm 0.25 mm I.D. × 60 m df = 0.25 µm	GC12162 GC15162
A 1965	VOC	InertCap 1	0.25 mm I.D. × 60 m df = 0.25 µm	GC11162

GL Sciences' Recommendations

Code	Target Compounds	Phase	Column Size	Cat.No.
Water Quality	VOC	AQUATIC	0.25 mm I.D. × 60 m df = 1.00 µm	GC29165
	Fust	InertCap 1 InertCap 5	0.25 mm I.D. × 30 m df = 0.40 µm 0.25 mm I.D. × 30 m df = 0.40 µm	GC11143 GC18143
	1,4-dioxane	AQUATIC	0.25 mm I.D. × 60 m df = 1.00 µm	GC29165
	Haloacetic acid	InertCap 1MS InertCap 1 InertCap 5MS/Sil InertCap 5MS/NP	0.25 mm I.D. × 30 m df = 1.00 µm 0.25 mm I.D. × 30 m df = 0.25 µm 0.25 mm I.D. × 30 m df = 0.25 µm 0.25 mm I.D. × 30 m df = 0.25 µm	GC12145 GC11142 GC15142 GC18642
	Formaldehyde	InertCap 1MS InertCap 5MS/Sil InertCap 5MS/NP	0.25 mm I.D. × 30 m df = 0.25 µm 0.25 mm I.D. × 30 m df = 0.25 µm 0.25 mm I.D. × 30 m df = 0.25 µm	GC12142 GC15142 GC18642
	Phenols	InertCap 1MS	0.25 mm I.D. × 30 m df = 0.25 µm	GC12142
	Di-2-ethylhexyl phthalate			
	MTBE			
	Pesticides	InertCap 1MS InertCap 5MS/Sil InertCap 5MS/NP InertCap Pesticides	0.25 mm I.D. × 30 m df = 0.25 µm 0.25 mm I.D. × 30 m df = 0.25 µm 0.25 mm I.D. × 30 m df = 0.25 µm 0.25 mm I.D. × 30 m	GC12142 GC15142 GC18642 GC15141
Environmental Water	VOC	AQUATIC	0.25 mm I.D. × 60 m df = 1.00 µm	GC29165
	Pesticides	InertCap 1MS InertCap 5MS/Sil InertCap 5MS/NP	0.25 mm I.D. × 30 m df = 0.25 µm 0.25 mm I.D. × 30 m df = 0.25 µm 0.25 mm I.D. × 30 m df = 0.25 µm	GC12142 GC15142 GC18642
Air	VOC	AQUATIC	0.25 mm I.D. × 60 m df = 1.00 µm	GC29165
	Aldehydes (Formaldehyde, Acetaldehyde)	InertCap 1	0.25 mm I.D. × 30 m df = 0.40 µm	GC11143
	Oxidized ethylene	InertCap Pure-WAX InertCap WAX	0.25 mm I.D. × 30 m df = 0.25 µm	GC68142 GC67142
	PAHs(Benzo[a]pyrene)	InertCap 5MS/Sil InertCap 5	0.25 mm I.D. × 30 m df = 0.25 µm 0.25 mm I.D. × 30 m df = 0.25 µm	GC15142 GC18142
Indoor Air	VOC (Toluene, o-, m-, p-xylene, styrene, ethylbenzene, p-dichlorobenzene, tertadecane, nonanal)	InertCap 1 InertCap 5	0.25 mm I.D. × 60 m df = 1.50 µm 0.25 mm I.D. × 60 m df = 1.50 µm	GC11166 GC18166
	Phthalic acid ester (Dibutyl phthalate, Diethylhexyl phthalate)	InertCap 5	0.25 mm I.D. × 30 m df = 0.25 µm	GC18142
	Organic phosphoric compounds (Chlorpyrifos, diazinon)	InertCap 5	0.25 mm I.D. × 30 m df = 0.25 µm	GC18142
	Pesticides(Fenobcarb)	InertCap 5	0.25 mm I.D. × 30 m df = 0.25 µm	GC18142

Food (Positive List System)

Target Compounds	Phase		
Simultaneous analyses of pesticides by GC/MS (Agricultural products, live stock)	InertCap 5MS/Sil	InertCap 5MS/NP	InertCap Pesticides
BHC, γ-BHC, DDT, Aldrin, Ethafluralin, Etridiazole, Quintozene, Chlordane, Dicofol, Dieldrin, Tecnazene, Tetradifon, Tefluthrin, Trifluralin, Halfenprox, Fenprpathrin, Hexachlorobenzene, Heptachlor, Benfluralin, Methoxychlor (Agricultural products)	InertCap 1MS	InertCap 1701	
2,4-D, 2,4-DB, Cloprop (Agricultural products)	InertCap 5MS/Sil	InertCap 5MS/NP	
2,2-DPA (Agricultural products)	InertCap 17MS	InertCap 17	
EPTC	InertCap 5		
MCPA, Dicamba	InertCap 5		
Acetamiprid (Agricultural products)	InertCap 5		
Acephate, Omethoate, Methamidophos (Agricultural products)	InertCap 210		
Anilazine (Agricultural products)	InertCap 5MS/Sil	InertCap 5MS/NP	
Amitraz (Agricultural products)	InertCap 5MS/Sil	InertCap 5MS/NP	InertCap 17
Uniconazole P	InertCap 5MS/Sil	InertCap 5MS/NP	
Eprocarb, Chlorpropham, Thiobencarb, Pyributicarb, Pendimethalin	InertCap 5MS/Sil	InertCap 5MS/NP	
Etephenon (Agricultural products)	InertCap 5MS/Sil	InertCap 5MS/NP	
Cartap, Bensultap, Thiocyclam (Agricultural products)	InertCap 210	InertCap 5MS/Sil	InertCap 5MS/NP
Carbosulfan, Carbofuran, Furathiocarb, Benfuracarb (Agricultural products)	InertCap 210	InertCap 5MS/Sil	InertCap 5MS/NP
Dichlobenil (Agricultural products)	InertCap 17MS	InertCap 17	
Dithiopyr, Thiazopyr (Agricultural products)	InertCap 1MS	InertCap 5MS/Sil	InertCap 5MS/NP
Dazomet, Metam, Methyl isothiocyanate (Agricultural products)	InertCap Pure-WAX	InertCap WAX	InertCap WAX-HT
Thiodicarb, Mesomile (Agricultural products)	InertCap Pure-WAX	InertCap WAX	InertCap WAX-HT
Sodium TCA (Agricultural products)	InertCap 1MS		
Nicotine (Agricultural products)	InertCap 5MS/Sil	InertCap 5MS/NP	
Hymexazol (Agricultural products)	InertCap 5MS/Sil	InertCap 5MS/NP	InertCap FFAP
Pyridalyl (Agricultural products)	InertCap 5MS/Sil	InertCap 5MS/NP	InertCap 1
Fentin (Agricultural products)	InertCap 1MS		
Butyrate	InertCap 210		
Furametyl	InertCap 1MS		
Fluazinam	InertCap 5MS/Sil	InertCap 5MS/NP	
Fluazifop	InertCap 5MS/Sil	InertCap 5MS/NP	
Fluoroimide	InertCap 17		
Flusilazole	InertCap 1701		
Flusulfamide	InertCap 5		
Flumioxazin	InertCap 5MS/Sil	InertCap 5MS/NP	
Prochloraz	InertCap 1		
Procymidone	InertCap 1MS		
Prohydrojasmon	InertCap 5MS/Sil	InertCap 5MS/NP	
Bentazone	InertCap 1701		
Benfuresate	InertCap 1MS		
Boscalid (Agricultural products)	InertCap 1MS	InertCap 5MS/Sil	InertCap 5MS/NP
Fosetyl	InertCap 225		
Metconazole (Agricultural products)	InertCap 1	InertCap 5MS/Sil	InertCap 5MS/NP
Molinate	InertCap 5		

Food and Additives Standards (Notification by the Health and Welfare Minister in 1959)

Target compounds	Phase		
2,4,5-T	InertCap 5MS/Sil	InertCap 5MS/NP	
Azocyclotin, Cyhexatin	InertCap 5		
Aldrin, Endrin, Dieldrin	InertCap 1MS	InertCap 1701	
Captafol	InertCap 1MS	InertCap 5MS/Sil	InertCap 5MS/NP
Coumaphos	InertCap 1	InertCap 210	
Daminozide	InertCap 5MS/Sil	InertCap 5MS/NP	
Triazophos, Parathion	InertCap 1	InertCap 210	
Ethylene dibromide	InertCap 624		
Propham	InertCap 5MS/Sil	InertCap 5MS/NP	

USP (US Pharmacopeia) / JP (Japanese Pharmacopeia)

USP US (Pharmacopeia)

USP Code	Phase Composition	Phase		
G1	Dimethylpolysiloxane oil	InertCap 1MS	InertCap 1	
G2	Dimethylpolysiloxane gum	InertCap 1MS	InertCap 1	
G3	50% Phenyl - 50% methylpolysiloxane	InertCap 17MS	InertCap 17	
G6	Trifluoropropylmethyl polysiloxane	InertCap 210		
G7	50% 3-Cyanopropyl - 50% phenylmethylsilicone	InertCap 225		
G14	Polyethylene glycol (av.mol.wt.of 950 to 1050)	InertCap Pure-WAX	InertCap WAX	InertCap WAX-HT
G15	Polyethylene glycol (av.mol.wt.of 3000 to 3700)	InertCap Pure-WAX	InertCap WAX	InertCap WAX-HT
G16	Polyethylene glycol compound (av.mol.wt.about 15,000). A high molecular weight compound of with a diepoxyde linker Polyethylene glycol	InertCap Pure-WAX	InertCap WAX	InertCap WAX-HT
G19	25% Phenyl - 25% cyanopropyl - 50% methylsilicone	InertCap 225		
G20	Polyethylene glycol (av.mol.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 diepoxyde 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/NP	InertCap 5
G28	25% Phenyl - 75% methylpolysiloxane	InertCap 25	AQUATIC	AQUATIC-2
G35	A high molecular weight compound of a polyethylene glycol and a diepoxyde that is esterified with nitrotetraphthalic acid.	InertCap FFAP		
G36	1% Vinyl - 5% phenylmethylpolysiloxane	InertCap 5MS/Sil	InertCap 5MS/NP	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 35		
G43	6% cyanopropylphenyl-94% dimethylpolysiloxane	InertCap 624	InertCap 1301	
G46	14% Cyanopropylphenyl - 86% methylpolysiloxane	InertCap 1701		
G47	Polyethylene glycol (av.mol.wt.of about 8000)	InertCap Pure-WAX	InertCap WAX	InertCap WAX-HT

JP (Japanese Pharmacopeia)

Target Compounds	Phase	Column Size	Cat.No.
Magnesium Stearate	InertCap Pure-WAX InertCap WAX InertCap WAX-HT	0.32 mm I.D. × 30 m df = 0.50 µm	GC68244 GC67244 GC68644
Senna Leaf	InertCap 1701	0.32 mm I.D. × 30 m df = 0.25 µm	GC61242
Powdered Senna Leaf	InertCap 1701	0.32 mm I.D. × 30 m df = 0.25 µm	GC61242
Red Ginseng	InertCap 1701	0.32 mm I.D. × 30 m df = 0.25 µm	GC61242
Ginseng	InertCap 1701	0.32 mm I.D. × 30 m df = 0.25 µm	GC61242
Powdered Ginseng	InertCap 1701	0.32 mm I.D. × 30 m df = 0.25 µm	GC61242
Ethanol	InertCap 624	0.32 mm I.D. × 30 m df = 1.80 µm	GC14747
Anhydrous Ethanol	InertCap 624	0.32 mm I.D. × 30 m df = 1.80 µm	GC14747
Ethanol for Disinfection	InertCap 624	0.32 mm I.D. × 30 m df = 1.80 µm	GC14747
Epirubicin Hydrochloride	InertCap Pure-WAX InertCap WAX	0.53 mm I.D. × 30 m df = 1.00 µm	GC68445 GC67445
Colchicine	InertCap Pure-WAX InertCap WAX	0.53 mm I.D. × 30 m df = 1.00 µm	GC68445 GC67445
Benzyl Alcohol	InertCap Pure-WAX InertCap WAX	0.32 mm I.D. × 30 m df = 0.50 µm	GC68244 GC67244
Glycerin	InertCap 1701	0.32 mm I.D. × 30 m df = 1.00 µm	GC61245

EPA Method Codes

Method	Application	Phase	Column Size	Cat.No.
501.3	Measurement of trihalomethanes in drinking water	InertCap 624	0.53 mm I.D. × 30 m df = 3.00 µm	GC14948
504.1	1,2-Dibromoethane (EDB), 1,2-Dibromo-3-chloropropane (DBCP),and 1,2,3-Trichloropropane (123TCP)	InertCap 1	0.32 mm I.D. × 30 m df = 1.00 µm	GC11245
502.2	Volatile organic compounds(VOC) in water	InertCap 624	0.53 mm I.D. × 30 m df = 3.00 µm	GC14948
505	Organohalide pesticides	InertCap 1 InertCap 5	0.32 mm I.D. × 30 m df = 1.00 µm 0.25 mm I.D. × 30 m df = 1.00 µm	GC11245 GC18145
506	Determination of phthalate and adipate esters	InertCap 1 InertCap 5	0.32 mm I.D. × 30 m df = 0.25 µm 0.32 mm I.D. × 30 m df = 0.25 µm	GC11242 GC18242
507	Determination of nitrogen- and phosphorus-containing pesticides in water	InertCap 5MS/Sil InertCap 1701	0.25 mm I.D. × 30 m df = 0.25 µm 0.53 mm I.D. × 30 m df = 1.00 µm	GC15142 GC61445
508.1	Organochlorine pesticides and PCBs	InertCap 5MS/Sil InertCap 5 InertCap 1701	0.25 mm I.D. × 30 m df = 0.25 µm 0.25 mm I.D. × 30 m df = 0.25 µm 0.25 mm I.D. × 30 m df = 0.25 µm	GC15142 GC18142 GC61142
515	Determination of chlorinated acids in water	InertCap 5	0.25 mm I.D. × 30 m df = 0.25 µm	GC18142
515.2	Determination of chlorinated acids in water	InertCap 1701	0.25 mm I.D. × 30 m df = 0.25 µm	GC61142
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. × 30 m df = 0.25 µm	GC61142
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. × 30 m df = 0.25 µm	GC61242
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. × 30 m df = 3.00 µm 0.53 mm I.D. × 75 m df = 3.00 µm	GC14948 GC14978
525.2	Determination of organic compounds in drinking water	InertCap 5MS/Sil	0.25 mm I.D. × 30 m df = 0.25 µm	GC15142
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. × 30 m df = 0.25 µm	GC15142
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. × 30 m df = 0.25 µm	GC15142
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. × 30 m df = 0.25 µm	GC15142
529	Determination of explosives and related 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. × 15 m df = 0.25 µm	GC15122
551	Determination of chlorination disinfection byproducts, chlorinated solvents, and halogenated pesticides, herbicides in drinking water	InertCap 5	0.25 mm I.D. × 30 m df = 1.00 µm	GC18145
551.1	Chlorinated solvents & disinfection by-products	InertCap 1MS InertCap 1301	0.25 mm I.D. × 30 m df = 1.00 µm 0.25 mm I.D. × 30 m df = 1.00 µm	GC12145 GC60145
552	Haloacetic acids	InertCap 5 InertCap 1701	0.25 mm I.D. × 30 m df = 0.25 µm 0.25 mm I.D. × 30 m df = 0.25 µm	GC18142 GC61142
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. × 30 m df = 0.25 µm	GC61142
556.1	Determination of carbonyl compounds in drinking water by fast gas chromatography	InertCap 5MS/Sil InertCap 1701	0.1 mm I.D. × 10 m df = 0.10 µm 0.1 mm I.D. × 10 m df = 0.10 µm	Contact us Contact us
601	Purgeable halocarbons	InertCap 624	0.53 mm I.D. × 30 m df = 1.00 µm 0.53 mm I.D. × 30 m df = 3.00 µm	Contact us GC14948
602	Purgeable aromatics	InertCap 624	0.53 mm I.D. × 30 m df = 1.00 µm 0.53 mm I.D. × 30 m df = 3.00 µm	Contact us GC14948
603	Acrolein and acrylonitrile	InertCap 624	0.25 mm I.D. × 30 m df = 1.00 µm 0.53 mm I.D. × 30 m df = 3.00 µm	Contact us GC14948
604/605	Phenols & benzidines	InertCap 5MS/Sil	0.53 mm I.D. × 30 m df = 1.40 µm 0.25 mm I.D. × 30 m df = 0.25 µm	Contact us GC15142
606	Phthalate esters	InertCap 5MS/Sil	0.25 mm I.D. × 30 m df = 0.25 µm 0.53 mm I.D. × 15 m df = 1.50 µm	GC15142 Contact us
607	Nitrosamines	InertCap 5MS/Sil	0.25 mm I.D. × 30 m df = 0.50 µm 0.53 mm I.D. × 30 m df = 1.50 µm	GC15144 Contact us

Method	Application	Phase	Column Size	Cat.No.
609	Nitroaromatics and isophorone	InertCap 5MS/Sil	0.25 mm I.D. × 30 m df = 0.50 µm 0.53 mm I.D. × 30 m df = 1.50 µm	GC15144 Contact us
610	Polycyclic aromatic hydrocarbons	InertCap 5MS/Sil	0.32 mm I.D. × 30 m df = 0.10 µm 0.32 mm I.D. × 30 m df = 0.25 µm	GC15240 GC15242
611	Haloethers	InertCap 5MS/Sil	0.25 mm I.D. × 30 m df = 0.50 µm 0.53 mm I.D. × 15 m df = 1.50 µm	GC15144 Contact us
612	Chlorinated hydrocarbons	InertCap 5MS/Sil	0.25 mm I.D. × 30 m df = 0.10 µm 0.25 mm I.D. × 60 m df = 0.10 µm 0.32 mm I.D. × 30 m df = 1.00 µm	GC15140 GC15160 Contact us
615	Chlorinated pesticides	InertCap 1701	0.25 mm I.D. × 30 m df = 0.25 µm 0.53 mm I.D. × 30 m df = 1.00 µm	GC61142 GC61445
619	Triazine herbicides	InertCap 17	0.25 mm I.D. × 30 m df = 0.50 µm 0.53 mm I.D. × 30 m df = 1.00 µm	Contact us GC65445
624	Purgeables	InertCap 624	0.25 mm I.D. × 30 m df = 1.40 µm 0.53 mm I.D. × 30 m df = 3.00 µm	GC14646 GC14948
625	Semi volatile organic compounds	InertCap 5MS/Sil	0.32 mm I.D. × 30 m df = 0.25 µm	GC15242
680	Pesticides and PCBs in water and soil/sediment	InertCap 1MS InertCap 5MS/Sil	0.32 mm I.D. × 30 m df = 0.25 µm 0.32 mm I.D. × 30 m df = 0.25 µm	GC12242 GC15242
1624	Volatile organic compounds by isotope dilution GC/MS	InertCap 624	0.25 mm I.D. × 30 m df = 1.40 µm 0.53 mm I.D. × 30 m df = 3.00 µm	GC14646 GC14948
1625	Semivolatile organic compounds by isotope dilution	InertCap 5MS/Sil	0.25 mm I.D. × 30 m df = 0.25 µm	GC15142
1653	Chlorinated phenols in waste water by in-situ MS acylation and GC low bleed/MS	InertCap 5MS/Sil	0.32 mm I.D. × 30 m df = 0.25 µm 0.25 mm I.D. × 30 m df = 0.25 µm	GC15242 GC15142
8010	Halogenated volatile organics	InertCap 624	0.25 mm I.D. × 30 m df = 1.40 µm	GC14646
8011	1, 2-dibromoethane and 1, 2-dibromo-3-chloropropane	InertCap 1	0.32 mm I.D. × 30 m df = 0.25 µm	GC11242
8015	Non-halogenated volatile organics	InertCap 624	0.25 mm I.D. × 30 m df = 1.40 µm 0.53 mm I.D. × 30 m df = 3.00 µm	GC14646 GC14948
8021	Aromatic volatile organics	InertCap 624	0.25 mm I.D. × 30 m df = 1.40 µm 0.53 mm I.D. × 30 m df = 3.00 µm	GC14646 GC14948
8030/8031	Acrolein, acrylonitrile, acetonitrile	InertCap 624	0.25 mm I.D. × 30 m df = 1.40 µm 0.53 mm I.D. × 30 m df = 3.00 µm	GC14646 GC14948
8040/8041	Phenols	InertCap 5	0.25 mm I.D. × 30 m df = 0.25 µm 0.53 mm I.D. × 30 m df = 1.50 µm	GC18142 GC18446
8061	Determination of phthalate and adipate esters	InertCap 5 InertCap 1701	0.53 mm I.D. × 30 m df = 1.50 µm 0.53 mm I.D. × 30 m df = 1.00 µm	GC18446 GC61445
8080	Organochlorine pesticides and PCBs	InertCap 1 InertCap 5MS/Sil	0.53 mm I.D. × 30 m df = 1.50 µm 0.25 mm I.D. × 30 m df = 0.50 µm	GC11446 GC15144
8081/8082	Organochlorine pesticides and PCBs as Arochlor	InertCap 5 InertCap 1701	0.53 mm I.D. × 30 m df = 1.50 µm 0.53 mm I.D. × 30 m df = 1.00 µm	GC18446 GC61445
8090/8091	Nitroaromatics and cyclic ketones	InertCap 5MS/Sil InertCap 5	0.25 mm I.D. × 30 m df = 0.50 µm 0.53 mm I.D. × 30 m df = 1.50 µm	GC15144 GC18446
8100	Polynuclear aromatic hydrocarbons	InertCap 5MS/Sil	0.32 mm I.D. × 30 m df = 0.25 µm	GC15242
8120/8121	Chlorinated hydrocarbons	InertCap 1MS	0.32 mm I.D. × 30 m df = 1.00 µm	Contact us
8140	Organophosphorus pesticides	InertCap 1MS InertCap 1 InertCap 1701	0.25 mm I.D. × 30 m df = 0.25 µm 0.53 mm I.D. × 30 m df = 1.50 µm 0.53 mm I.D. × 30 m df = 1.00 µm	GC12142 GC11446 GC61445
8141	Organophosphorus compounds	InertCap 5MS/Sil InertCap 5	0.25 mm I.D. × 15 m df = 0.25 µm 0.53 mm I.D. × 15 m df = 1.50 µm	GC15122 GC18426
8150/8151	Chlorinated herbicides	InertCap 5MS/Sil InertCap 1701	0.25 mm I.D. × 30 m df = 0.50 µm 0.53 mm I.D. × 30 m df = 1.00 µm	GC15144 GC61445
8240	Volatile organic compounds	InertCap 624	0.25 mm I.D. × 30 m df = 1.00 µm 0.53 mm I.D. × 30 m df = 3.00 µm	Contact us GC14948
8250	Semi-volatile organic compounds	InertCap 5MS/Sil	0.25 mm I.D. × 30 m df = 0.50 µm	GC15144
8260	Volatile organic compounds	InertCap 624	0.32 mm I.D. × 60 m df = 1.80 µm 0.53 mm I.D. × 75 m df = 3.00 µm	GC14767 GC14978
8270	Semi volatile organic compounds(SVOC)	InertCap 5	0.25 mm I.D. × 30 m df = 1.00 µm	GC18145
8280	Analysis of polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans	InertCap 5MS/Sil	0.25 mm I.D. × 30 m df = 0.25 µm 0.25 mm I.D. × 60 m df = 0.10 µm	GC15142 GC15160

ASTM Method Codes

Method	Application	Phase		Column Size	Cat.No.	
D 1983	Fatty acid	InertCap Pure-WAX	InertCap WAX	0.25 mm I.D. × 30 m df = 0.25 µm	GC68142	GC67142
D 2268	Analysis of n-heptane and iso-octane (high purity)	InertCap 1		0.25 mm I.D. × 60 m df = 0.50 µm	Contact us	
D 2306	Xylene isomer	InertCap Pure-WAX	InertCap WAX	0.25 mm I.D. × 60 m df = 0.25 µm	GC68162	GC67162
D 2426	Butadiene and styrene in butadiene concentrates	InertCap 1		0.53 mm I.D. × 30 m df = 5.00 µm	GC11449	
D 2427	C2-C5 hydrocarbons in gasolines	InertCap 1		0.53 mm I.D. × 30 m df = 5.00 µm	GC11449	
D 2580	Phenols in water	InertCap 5MS/Sil		0.32 mm I.D. × 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. × 30 m df = 1.00 µm	GC68445	GC67445
D 2908	Volatile organic compounds (VOC) in water	InertCap 624 InertCap Pure-WAX		0.32 mm I.D. × 30 m df = 1.80 µm 0.32 mm I.D. × 30 m df = 0.50 µm	GC14747 GC68244	
D 2998	Polyhydric alcohols	InertCap 1		0.32 mm I.D. × 30 m df = 1.00 µm	GC11245	
D 2999	Monopentaerythritol in commercial pentaerythritol	InertCap 1		0.53 mm I.D. × 30 m df = 1.50 µm	GC11446	
D 3009	Composition of turpentine	InertCap Pure-WAX	InertCap WAX	0.32 mm I.D. × 30 m df = 0.50 µm	GC68244	GC67244
D 3168	Polymers in emulsion paints	InertCap 1		0.32 mm I.D. × 30 m df = 1.00 µm	GC11245	
D 3257	Aromatics in mineral spirits	InertCap 624		0.53 mm I.D. × 30 m df = 3.00 µm	GC14948	
D 3329	Purity of methyl isobutyl ketone	InertCap Pure-WAX	InertCap WAX	0.53 mm I.D. × 30 m df = 1.00 µm	GC68445	GC67445
D 3432	Toluene diisocyanates in urethane prepolymers	InertCap 1		0.32 mm I.D. × 30 m df = 1.00 µm	GC11245	
D 3447	Purity of halogenated organic solvents	InertCap 1		0.53 mm I.D. × 60 m df = 5.00 µm	GC11469	
D 3452	Identification of rubber	InertCap 1		0.53 mm I.D. × 30 m df = 1.50 µm	GC11446	
D 3606	Benzene and toluene in gasoline	InertCap 1		0.25 mm I.D. × 15 m df = 0.10 µm	Contact us	
D 3687	Volatile organic compounds vapors (VOC)	InertCap Pure-WAX	InertCap WAX	0.32 mm I.D. × 30 m df = 0.50 µm	GC68244	GC67244
D 3695	Volatile alcohols in water	InertCap Pure-WAX	InertCap WAX	0.53 mm I.D. × 30 m df = 1.00 µm	GC68445	GC67445
D 3725	Fatty acids in drying oils	InertCap FFAP		0.53 mm I.D. × 30 m df = 1.00 µm	GC28945	
D 3760	Analysis of cumene	InertCap Pure-WAX	InertCap WAX	0.32 mm I.D. × 60 m df = 0.25 µm	GC68262	GC67262
D 3797	Analysis of o-xylene	InertCap Pure-WAX	InertCap WAX	0.32 mm I.D. × 60 m df = 0.50 µm	GC68264	GC67264
D 3798	Analysis of p-xylene impurities	InertCap Pure-WAX	InertCap WAX	0.32 mm I.D. × 60 m df = 0.50 µm	GC68264	GC67264
D 3876	Methoxyl and hydroxypropyl substitution in cellulose ether products	InertCap 1		0.32 mm I.D. × 30 m df = 1.00 µm	GC11245	
D 3962	Impurities in styrene	InertCap FFAP		0.53 mm I.D. × 30 m df = 1.00 µm	GC28945	
D 4367	Benzene in hydrocarbon solvent	InertCap 1		0.25 mm I.D. × 15 m df = 0.10 µm	Contact us	
D 4420	Aromatics compounds in gasoline	InertCap 1		0.25 mm I.D. × 15 m df = 0.10 µm	Contact us	
D 4735	Thiophene impurities in benzene	InertCap FFAP		0.53 mm I.D. × 30 m df = 1.00 µm	GC28945	
D 4768	Phenol and cresol inhibitors in insulating oils	InertCap FFAP		0.53 mm I.D. × 30 m df = 1.00 µm	GC28945	
D 4864	Methanol in propylene concentrates	InertCap Pure-WAX	InertCap WAX	0.53 mm I.D. × 30 m df = 1.00 µm	GC68445	GC67445
D 4947	Chlordane and heptachlor residues in indoor air	InertCap 5		0.53 mm I.D. × 30 m df = 1.50 µm	GC18446	
D 5060	Impurities in ethylbenzene	InertCap Pure-WAX	InertCap FFAP	0.32 mm I.D. × 60 m df = 0.50 µm	GC68264	GC28764
D 5075	Nicotine and 3-ethenylpyridine in indoor air	InertCap 5		0.53 mm I.D. × 30 m df = 1.50 µm	GC18446	
D 5135-35	Analysis of styrene	InertCap Pure-WAX	InertCap WAX	0.32 mm I.D. × 60 m df = 0.50 µm	GC68264	GC67264
D 5310	Tar acid composition	InertCap 5MS/Sil		0.25 mm I.D. × 30 m df = 0.25 µm	GC15142	
D 5320	Determination of 1,1,1-trichloroethane and methylene chloride content in stabilized trichloroethylene and tetrachloroethylene	InertCap 1		0.53 mm I.D. × 30 m df = 3.00 µm	GC11448	
D 5442	Analysis of petroleum waxes	InertCap 1		0.32 mm I.D. × 30 m df = 0.25 µm	GC11242	
D 5580	Aromatics in finished gasoline	InertCap 1		0.53 mm I.D. × 30 m df = 5.00 µm	GC11449	
D 5599	Determination of oxygenates in gasoline	InertCap 1		0.25 mm I.D. × 60 m df = 1.00 µm	GC11165	
D 5769	Determination of benzene, toluene, and total aromatics in finished gasolines	InertCap 1		0.25 mm I.D. × 60 m df = 1.00 µm	GC11165	
D 5812	Determination of organochlorine pesticides in water	InertCap 5MS/Sil		0.25 mm I.D. × 30 m df = 0.25 µm	GC15142	
D 6160	Determination of polychlorinated biphenyls (PCBs) in waste materials	InertCap 5MS/Sil		0.25 mm I.D. × 30 m df = 0.25 µm	GC15142	

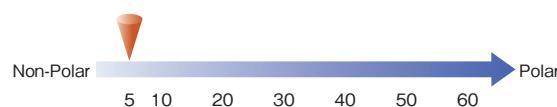
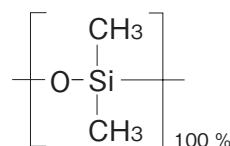
G C Capillary Columns

● InertCap™ 1MS	002	● InertCap™ 1701	013
● InertCap™ 1	003	● InertCap™ 17MS	014
● InertCap™ 5MS/Sil	004	● InertCap™ 17	015
● InertCap™ 5MS/NP	006	● InertCap™ 210	016
● InertCap™ 5	007	● InertCap™ 225	017
● InertCap™ Pesticides	008	● InertCap™ Pure-WAX	018
● InertCap™ 624	009	● InertCap™ WAX	020
● InertCap™ 1301	010	● InertCap™ WAX-HT	021
● InertCap™ 25	011	● InertCap™ FFAP	022
● InertCap™ 35	012	● InertCap™ Fast GC Column	023

InertCap™ 1MS

- 100 % Methylpolysiloxane
- USP Phase G2
- Non-Polar
- Cross-Linked
- Ultra Low Bleed
- Equivalent : DB-1ms, HP-1ms, Rxi-1ms, VF-1ms, Equity-1

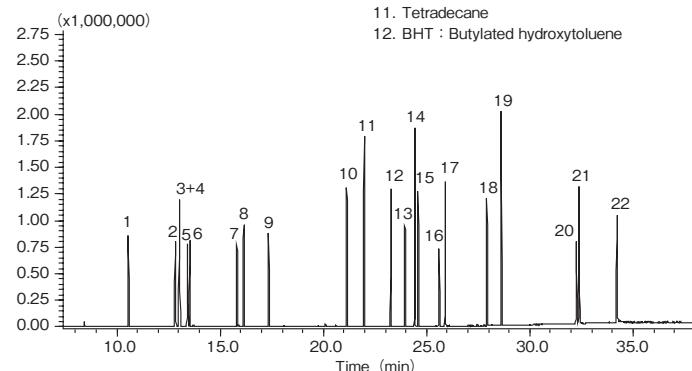
Structure



InertCap 1MS is a non-polar column incorporating 100% methylpolysiloxane. Samples elute in order of low boiling points. Designed for GC/MS, InertCap 1MS realizes the world highest inertness and lowest bleeding.

Automobile Interior Material Analysis

System	: GC/MS Thermal Desorption (T-Dex II)	1. Toluene	13. DEP : Diethyl phthalate
Column	: InertCap 1MS	2. Ethylbenzene	14. C16 : n-Hexadecane
	0.25 mm I.D. × 60 m df = 0.25 μm	3. m-Xylene	15. TBP : Tributyl phosphate
Col. Temp.	: 40 °C (5 min hold)–10 °C/min–280 °C (21 min hold)	4. p-Xylene	16. TCEP : Tris (2-chloroethyl) phosphate
Carrier Gas	: He 1 mL/min (constant flow)	5. Styrene	17. DBA : Di-n-butyl adipate
Injection	: Thermal Desorption 270 °C	6. o-Xylene	18. DBP : Di-n-butyl phthalate
	Split 1 : 5	7. p-Dichlorobenzene	19. C20 : n-Eicosane
Detection	: MS Scan	8. 2-Ethyl-1-hexanol	20. TPP : Triphenyl phosphate
Sample Size	: 100 μg/mL in Ethanol 1 μL	9. Nonanal	21. DOA : Di(2-ethylhexyl) adipate
		10. D6 : Hexamethylcyclotrisiloxane	22. DOP : Di(2-ethylhexyl) phthalate
		11. Tetradecane	
		12. BHT : Butylated hydroxytoluene	



[InertCap™ 1MS]

ID (mm)	Length (m)	Thickness (μm)	Max. Temperature (°C)	Cat.No.
0.25	15	0.25	iso.325-prog.350	GC12122
	30	0.25	iso.325-prog.350	GC12142
		1.00	iso.300-prog.320	GC12145
	60	0.25	iso.325-prog.350	GC12162
		1.00	iso.300-prog.320	GC12165
0.32	15	0.25	iso.325-prog.350	GC12222
	30	0.25	iso.325-prog.350	GC12242
	60	0.25	iso.325-prog.350	GC12262

[InertCap™ 1MS ProGuard(Built-in Guard Column)]

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

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

ID (mm)	Length (m)	Thickness (μm)	Transferline (m)	Max. Temperature (°C)	Cat.No.
0.25	30	0.25	2	iso.325-prog.350	1010-12192

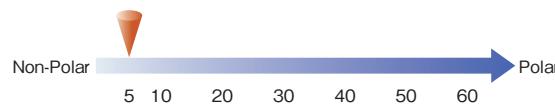
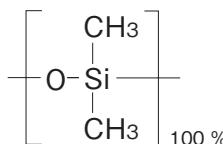
※See page 32 for more information about ProGuard and T.L.

InertCap™ 1

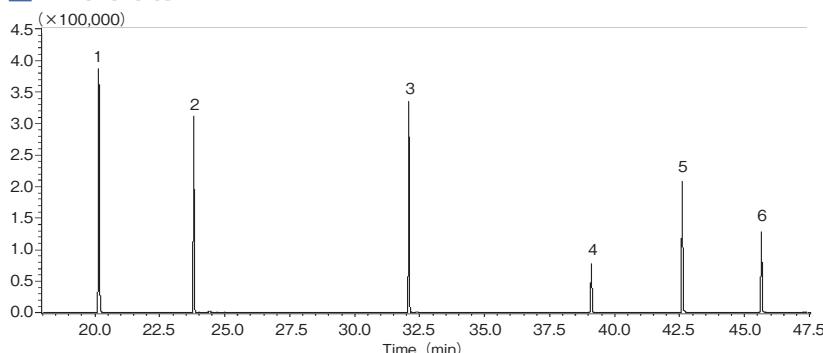
- 100 % Methylpolysiloxane
- USP Phase G2
- Non-Polar
- Cross-Linked
- Equivalent : DB-1, HP-1, Rtx-1, CP-Sil 5CB, SPB-1, BP-1

InertCap 1 is a non-polar column incorporating 100% methylpolysiloxane. Samples elute in order of low boiling points. InertCap 1 has broad utility and can be used for a variety of general analyses.

Structure



Phthalate



System : GC/MS
 Column : InertCap 1
 0.25 mm I.D. × 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. Diocetylphthalate

[InertCap™ 1]

ID (mm)	Length (m)	Thickness (μm)	Max. Temperature (°C)	Cat.No.
0.18	15	0.18	iso.325-prog.350	GC11021
		0.28		GC11022
	20	0.18	iso.325-prog.350	GC11031
		0.28		GC11032
0.25	15	0.25	iso.325-prog.350	GC11122
		0.40		GC11123
		0.50		GC11124
		5.00	iso.260-prog.300	GC11129
	30	0.10	iso.325-prog.350	GC11140
		0.25		GC11142
		0.40		GC11143
		0.50	iso.300-prog.320	GC11144
	60	1.00		GC11145
		1.50		GC11146
		5.00	iso.260-prog.300	GC11149
		0.25	iso.325-prog.350	GC11162
		0.40		GC11163
		0.50		GC11164
	15	1.00	iso.300-prog.320	GC11165
		1.50		GC11166
		0.25	iso.325-prog.350	GC11222
		0.40	iso.325-prog.350	GC11223
		5.00	iso.260-prog.300	GC11229

ID (mm)	Length (m)	Thickness (μm)	Max. Temperature (°C)	Cat.No.
0.32	30	0.25	iso.325-prog.350	GC11242
		0.40		GC11243
		0.50		GC11244
		1.00	iso.300-prog.320	GC11245
	60	5.00	iso.260-prog.300	GC11249
		0.25	iso.325-prog.350	GC11262
		0.40		GC11263
		0.50	iso.325-prog.350	GC11264
0.53	15	1.00	iso.300-prog.320	GC11265
		1.50		GC11269
		2.00	iso.260-prog.280	GC11425
		3.00		GC11426
	30	5.00	iso.260-prog.280	GC11427
		1.00	iso.300-prog.320	GC11428
		1.50		GC11429
		2.00	iso.300-prog.320	GC11445
		3.00		GC11446
		5.00	iso.260-prog.280	GC11447
	60	2.00	iso.300-prog.320	GC11448
		5.00	iso.260-prog.280	GC11449

[InertCap™ 1 ProGuard (Built-in Guard Column)]

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

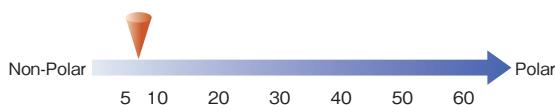
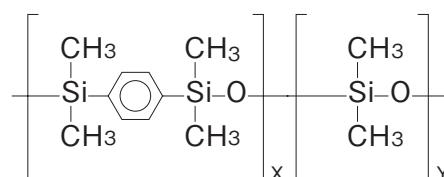
*See page 32 for more information about ProGuard and T.L.

InertCap™ 5MS/Sil

- Phenyl Arylene polymer equivalent to a 5 % Phenyl - 95 % Methylpolysiloxane
- USP Phase G27
- Slightly Polar
- Cross-Linked
- Ultra Low Bleed
- Equivalent : DB-5ms, Rxi-5Sil MS, VF-5ms, SLB-5, BPX-5

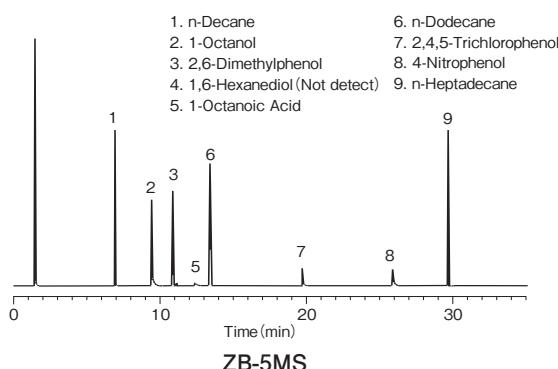
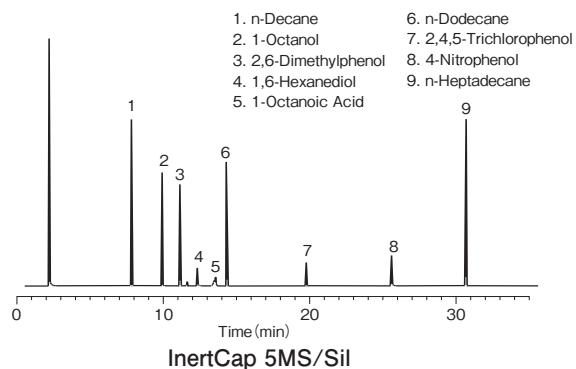
InertCap 5MS/Sil is a low polarity column incorporating 5% phenyl and 95% methylpolysilarylene. Designed for GC/MS, InertCap 5MS/Sil realized the higher heat resistance and lower bleeding by arylene technology. In addition to our basic performance and quality inspection, pesticide mixture sample is used for the further rigorous inspection for each lot to guarantee the product reliability.

Structure

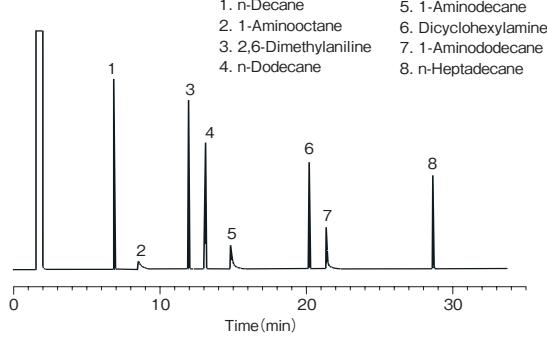
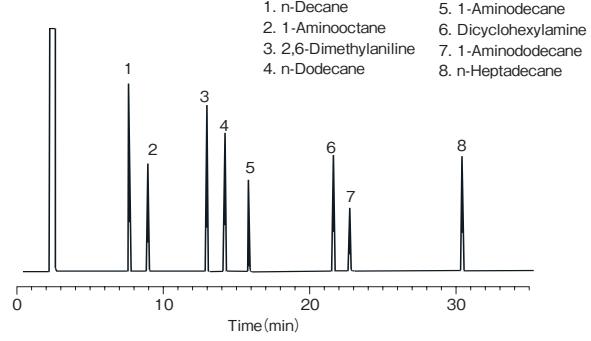


[Comparison data]

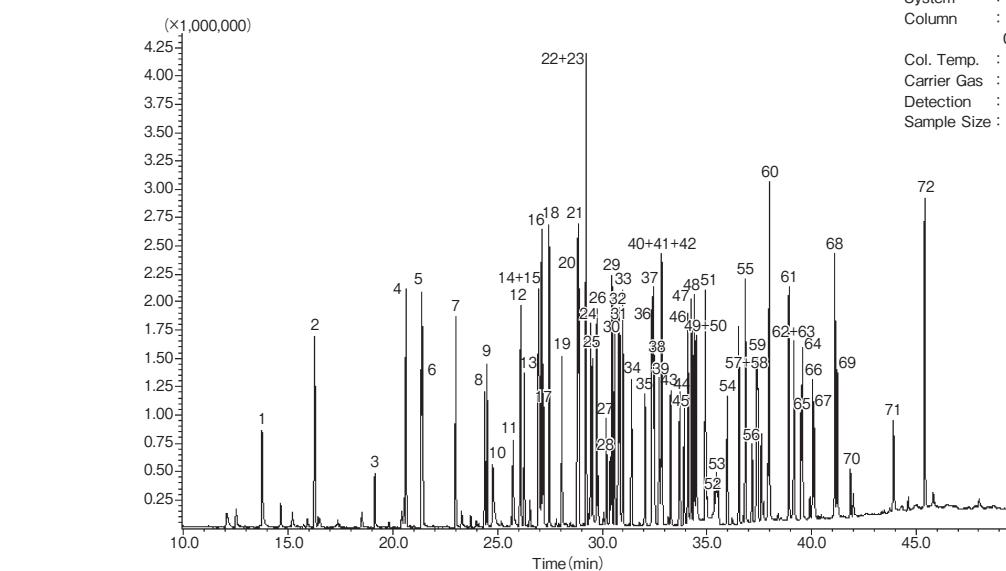
■ Acidic compounds



■ Basic compounds



Pesticides



1. dichlorvos (DDVP)	12. simazine	23. tolclophosmethyl	34. fthalide	45. butamifos	56. chlornitrofen	67. bifenox
2. diclofop	13. atrazine	24. simetryn	35. pendimethalin	46. napropamide	57. propiconazole	68. pyriproxyfen
3. etridiazole	14. propyzamide	25. metalaxylyl	36. dimethamethrin	47. flutrialil	58. edifenphos	69. mefenacet
4. chloroneb	15. pyroquilon	26. dithiopyr	37. isofenphos	48. pretilachlor	59. endosulfan sulfate	70. benfuracarb
5. Isoproturon	16. diazinon	27. fenitrothion	38. methyl dinuron	49. isoprotiolane	60. thencyltrichlor	71. cafenstrole
6. molinate	17. chlorothalonil	28. probenazole	39. phenothate	50. tricyclazole	61. pyributicarb	72. ethofenprox
7. fenobucarb	18. disulfoton	29. espocarb	40. procymidone	51. buprofezin	62. pyridaphenthion	
8. trifluralin	19. iprobenfos	30. malathion	41. captan	52. isoxathion	63. iprodione	
9. benfluralin	20. terbutecarb	31. chlorpyrifos	42. dimepiperate	53. carpropamid	64. EPN	
10. pencycuron	21. bromobutide	32. benthiocarb	43. methidathion	54. β -Endosulfan	65. piperophos	
11. dimethoate	22. alachlor	33. fenthion	44. α -Endosulfan	55. mepronil	66. anilofos	

InertCap™ 5MS/Sil

ID (mm)	Length (m)	Thickness (μ m)	Max. Temperature (°C)	Cat.No.
0.18	20	0.18	iso.325-prog.350	GC15031
		0.10		GC15120
		0.25	iso.325-prog.350	GC15122
		0.50		GC15124
	30	0.10		GC15140
		0.25	iso.325-prog.350	GC15142
		0.50		GC15144
		1.00		GC15145
	60	0.10	iso.325-prog.350	GC15160
		0.25		GC15162
0.25	15	0.10		GC15220
		0.25	iso.325-prog.350	GC15222
		0.50		GC15224
	30	0.10		GC15240
		0.25	iso.325-prog.350	GC15242
		0.50		GC15244
		1.00		GC15245
	60	0.10	iso.325-prog.350	GC15260
		0.25		GC15262

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

ID (mm)	Length (m)	Thickness (μ m)	Guard Column (m)	Max. Temperature (°C)	Cat.No.
0.25	30	0.25	2	iso.325-prog.350	1010-15172
			5		1010-15173
			10		1010-15174

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

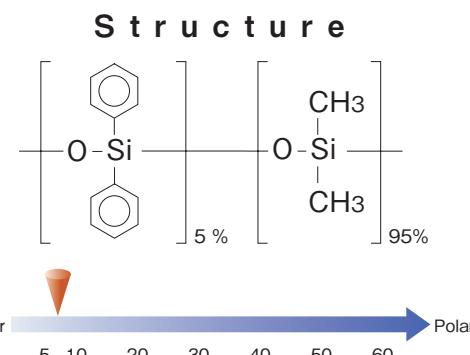
ID (mm)	Length (m)	Thickness (μ m)	Transfer Line (m)	Max. Temperature (°C)	Cat.No.
0.25	30	0.25	2	iso.325-prog.350	1010-15192

※See page 32 for more information about ProGuard and T.L.

InertCap™ 5MS/NP

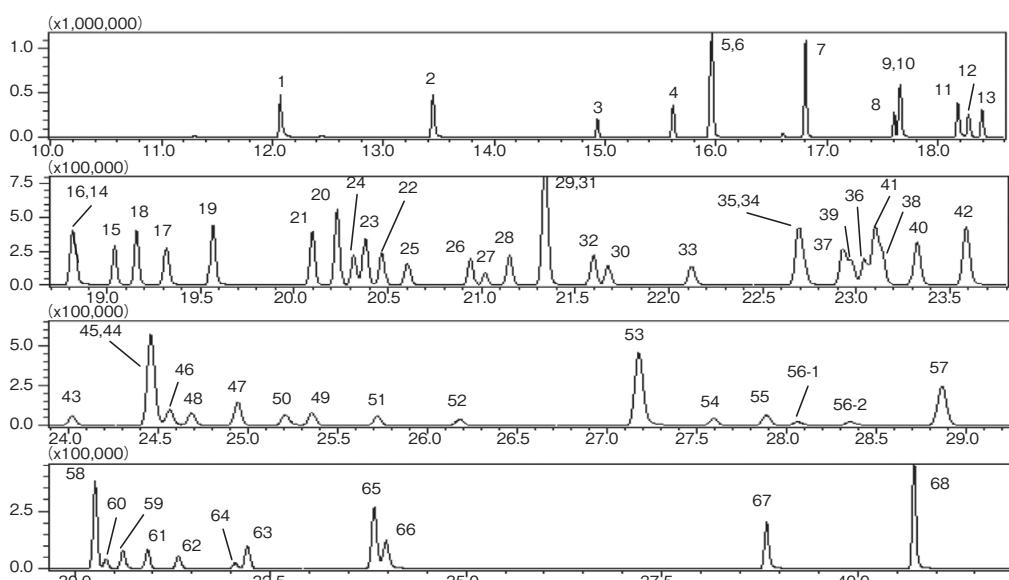
- 5 % Phenyl - 95 % Methylpolysiloxane
- USP Phase G27
- Slightly Polar
- Cross-Linked
- Ultra Low Bleed
- Equivalent : HP-5ms, Rxi-5ms, Equity-5, SPB-5

InertCap 5MS/NP is a low polarity column incorporating 5% phenyl and 95% methylpolysiloxane. Designed as a column for GC/MS, InertCap 5MS/NP realizes the world highest inertness and lowest bleeding.



■ 68 Pesticides

System : GC/MS
 Column : InertCap 5MS/NP 0.25 mm I.D. X 30 m df = 0.25 μ m
 Col. Temp. : 50 °C (3 min hold) - 10 °C/min - 200 °C - 3 °C/min - 230 °C (5 min hold) - 5 °C/min - 300 °C (8 min hold)
 Injection : Splitless 2 min
 Detection : MS SIM
 Sample Size : 1 μ g/mL 1 μ L



1. DDVP	11. Dimethoate	21. Bromobutide	31. Benthiocarb	41. Dimepiperate	51. Isoxathion	59. Pyridaphenthion
2. Dichlobenil	12. Simazine	22. Alachlor	32. Fenthion	42. Methidathion	52. Endosulfan β	60. Iprodione
3. Etridiazole	13. Atrazine	23. Tolclofos-methyl	33. Phthalide	43. Endosulfan α	53. Mepronil	61. EPN
4. Chlорoneb	14. Propyzamide	24. Simetryn	34. Pendiimethalin	44. Butamifos	54. CNP	62. Piperophos
5. Isoprocarb	15. Diazinon	25. Metalaxyl	35. Dimethametryn	45. Napropamide	55. Edifenphos	63. Anilofos
6. Molinate	16. Pyroquilon	26. Dithiopyr	36. Isophenphos	46. Flutolanil	56-1. Propiconazole1	64. Bifenox
7. Fenobucarb	17. Chlorothalonil	27. Fenitrothion	37. Methyl dymron	47. Pretiochlor	56-2. Propiconazole2	65. Pyriproxyfen
8. Trifluralin	18. Ethylthiomethon	28. Espocarb	38. Phenothoate	48. Isoprothiolane	57. Thenylichlor	66. Mefenacet
9. Benfluralin	19. Iprobenfos	29. Malathion	39. Captan	49. Buprofezin	58. Pyributicarb	67. Cafenstrole
10. Pencycuron	20. Terbucarb	30. Chlorpyrifos	40. Procymidone	50. CNP-amino	68. Ethofenprox	

[InertCap™ 5MS/NP]

ID (mm)	Length (m)	Thickness (μ m)	Max. Temperature (°C)	Cat.No.
0.25	30	0.25	iso.325-prog.350	GC18642
0.32	30	0.25	iso.325-prog.350	GC18742

[InertCap™ 5MS/NP ProGuard(Built-in Guard Column)]

ID (mm)	Length (m)	Thickness (μ m)	Guard Column (m)	Max. Temperature (°C)	Cat.No.
			2	iso.325-prog.350	1010-18941
			5		1010-18942
			10		1010-18943

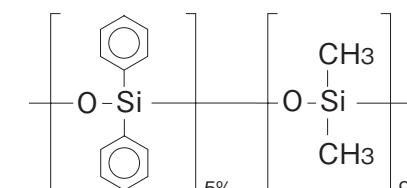
*See page 32 for more information about ProGuard and T.L.

InertCap™ 5

- 5 % Phenyl - 95 % Methylpolysiloxane
- USP Phase G27
- Slightly Polar
- Cross-Linked
- Equivalent : DB-5, HP-5, Rtx-5, CP-Sil 8CB, SPB-5

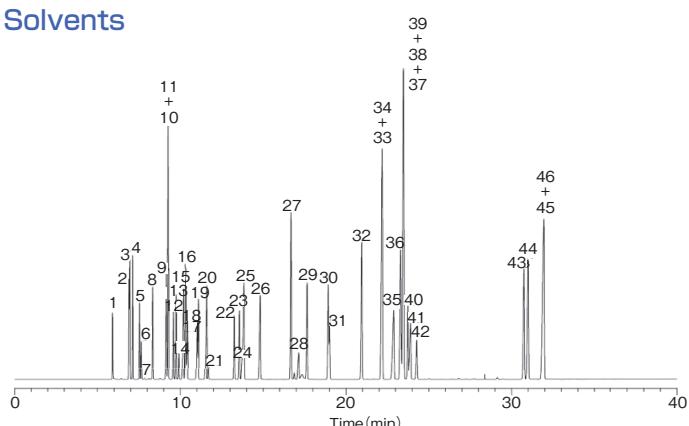
InertCap 5 is a low polarity column incorporating 5% phenyl and 95% methylpolysiloxane. InertCap 5 is an optimal first choice column for a variety of general analyses such as pesticides and volatile compounds etc.

Structure



Non-Polar → Polar

Solvents



- | | | | |
|-------------------------------|------------------------------|----------------------------|--------------------------|
| 1. Methanol | 11. n-Hexane | 21. Carbon Tetrachloride | 31. Tetrachloroethylene |
| 2. Acetone | 12. cis-1,2-Dichloroethylene | 22. Trichloroethylene | 32. Chlorobenzene |
| 3. i-Propanol | 13. Ethyl acetate | 23. 1,4-Dioxane | 33. m-Xylene |
| 4. Ethyl ether | 14. Chloroform | 24. Ethyl cellosolve | 34. p-Xylene |
| 5. Methyl acetate | 15. i-Butanol | 25. n-Propyl acetate | 35. Cyclohexanol |
| 6. Dichloromethane | 16. Tetrahydrofuran | 26. i-Amyl alcohol | 36. Styrene |
| 7. Carbon disulfide | 17. Methyl cellosolve | 27. Toluene | 37. Cyclohexanone |
| 8. trans-1,2-Dichloroethylene | 18. 1,1,1-Trichloroethane | 28. N,N-Dimethyl formamide | 38. 1-Methylcyclohexanol |
| 9. Methyl ethyl ketone | 19. 1,2-Dichloroethane | 29. Methyl-n-butyl ketone | 39. o-Xylene |
| 10. 2-Butanol | 20. n-Butanol | 30. n-Butyl acetate | 40. Cellosolve acetate |

System : GC/FID
 Column : InertCap 5
 0.25 mm I.D. × 60 m df = 0.40 μm
 Col. Temp. : 40 °C (5 min hold) – 4 °C/min – 230 °C (5 min hold)
 Carrier Gas : He 130 kPa
 Injection : Split flow 100 mL/min
 250 °C
 Detection : FID Range 10¹
 250 °C
 Sample Size : Mixed evenly 1 μL

[InertCap™ 5]

ID (mm)	Length (m)	Thickness (μm)	Max. Temperature (°C)	Cat.No.
0.18	15	0.18	iso.325-prog.350	GC18021
		0.28		GC18022
	20	0.18	iso.325-prog.350	GC18031
		0.28		GC18032
	30	0.25	iso.325-prog.350	GC18122
		0.40		GC18123
		0.50		GC18124
		0.10		GC18140
		0.25		GC18142
		0.40		GC18143
		0.50		GC18144
0.25	60	1.00	iso.300-prog.320	GC18145
		1.50		GC18146
		0.25	iso.325-prog.350	GC18162
		0.40		GC18163
		0.50		GC18164
		1.00	iso.300-prog.320	GC18165
		1.50		GC18166

ID (mm)	Length (m)	Thickness (μm)	Max. Temperature (°C)	Cat.No.
0.32	15	0.25	iso.325-prog.350	GC18222
		0.40		GC18223
	30	0.25	iso.325-prog.350	GC18242
		0.40		GC18243
	60	0.50	iso.300-prog.320	GC18244
		1.00		GC18245
		0.25	iso.325-prog.350	GC18262
		0.40		GC18263
0.53	15	0.50	iso.325-prog.350	GC18264
		1.00		GC18425
		1.50	iso.300-prog.320	GC18426
		2.00		GC18427
		3.00	iso.260-prog.280	GC18428
		5.00		GC18429
	30	1.00	iso.300-prog.320	GC18445
		1.50		GC18446
		2.00		GC18447
		3.00	iso.260-prog.280	GC18448
		5.00		GC18449
		2.00	iso.300-prog.320	GC18467

[InertCap™ 5 ProGuard(Built-in Guard Column)]

ID (mm)	Length (m)	Thickness (μm)	Guard Column (m)	Max. Temperature (°C)	Cat.No.
0.25	30	0.25	2	iso.325-prog.350	1010-18172
			5		1010-18173
			10		1010-18174

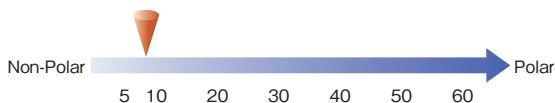
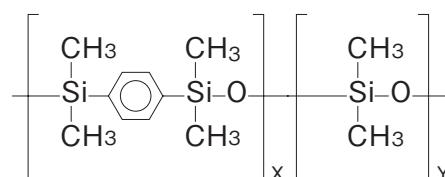
*See page 32 for more information about ProGuard and T.L.

InertCap™ Pesticides

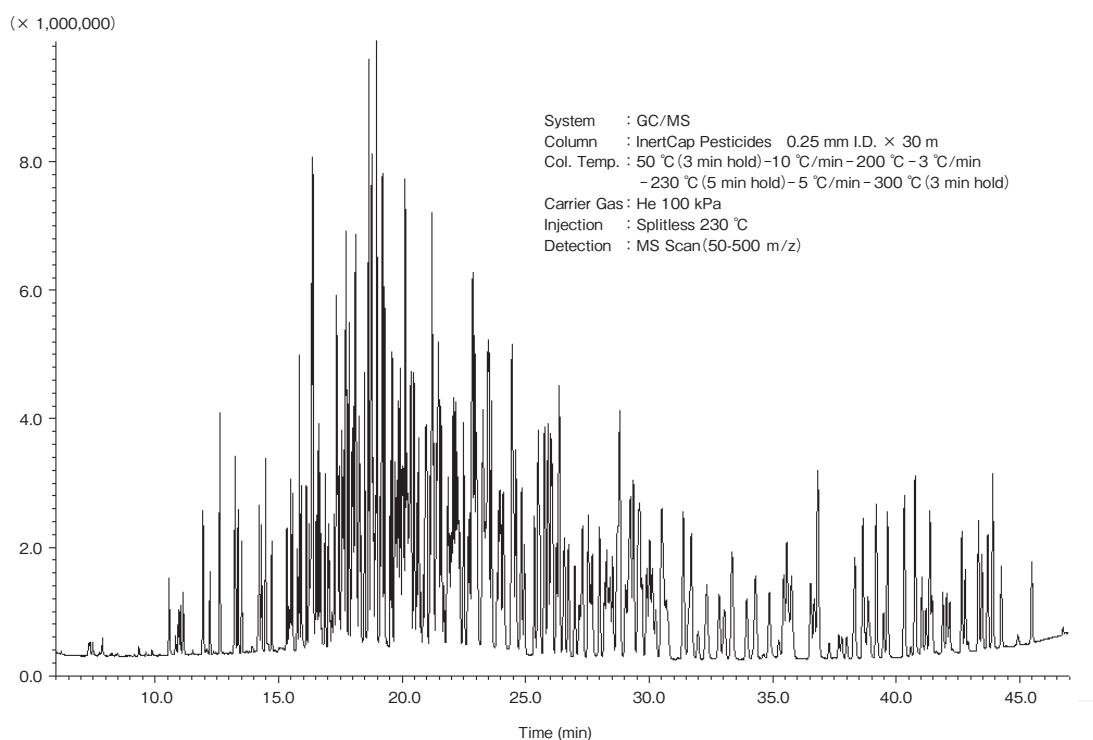
- Phenyl Arylene polymer equivalent to a 5 % Phenyl - 95 % Methylpolysiloxane
- USP Phase G27
- Slightly Polar
- Cross-Linked
- Ultra Low Bleed
- GL Sciences' original, No equivalent

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.

Structure



■ 324 Pesticides



【 InertCap™ Pesticides 】

ID (mm)	Length (m)	Thickness (μm)	Max. Temperature (°C)	Cat.No.
0.25	30	–	iso.325-prog.350	GC15141

【 InertCap™ Pesticides ProGuard (Built-in Guard Column) 】

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

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

ID (mm)	Length (m)	Thickness (μm)	Transfer Line (m)	Max. (°C)	Cat.No.
0.25	30	–	2	iso.325-prog.350	1010-15191

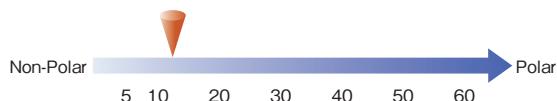
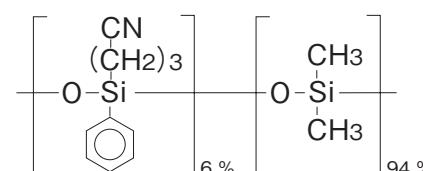
*See page 32 for more information about ProGuard and T.L.

InertCap™ 624

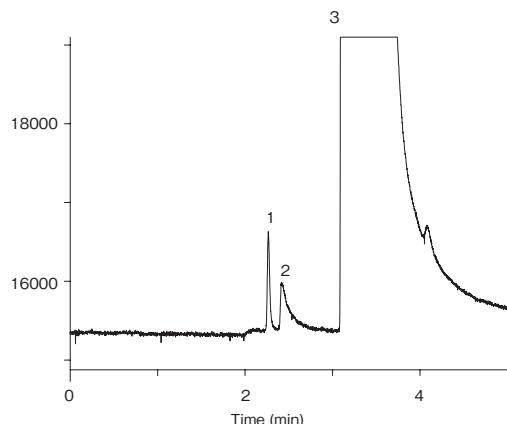
- 6 % Cyanopropylphenyl - 94 % Methylpolysiloxane
- USP Phase G43
- Medium Polar
- Cross-Linked
- Equivalent : DB-624, HP-VOC, Rtx-624, VF-624ms

InertCap 624 is a medium polar column incorporating 6% cyanopropylphenyl and 94% methylpolysiloxane, designed for VOC analysis. Corresponding to the USP G43, InertCap 624 is optimal for the analysis of "acetaldehyde-methanol in ethanol" defined in the Japanese Pharmacopoeia Fifteenth Edition.

Structure



Impurities in ethanol



System : GC/FID
 Column : InertCap 624 0.32 mm I.D. × 30 m df = 1.80 µm
 Col. Temp. : 40 °C
 Carrier Gas : He 60 kPa
 Injection : Split 1:20 240 °C
 Detection : FID Range 10⁰–240 °C
 Sample Size : 1 µL

1. Acetaldehyde
 2. Methanol
 3. Ethanol

[InertCap™ 624]

ID (mm)	Length (m)	Thickness (µm)	Max. Temperature (°C)	Cat.No.
0.25	30	1.40	iso.260-prog.260	GC14646
	60	1.40	iso.260-prog.260	GC14666
0.32	30	1.80	iso.260-prog.260	GC14747
		3.00		GC14748
0.53	60	1.80	iso.260-prog.260	GC14767
	30	3.00	iso.260-prog.260	GC14948
	75	3.00	iso.260-prog.260	GC14978

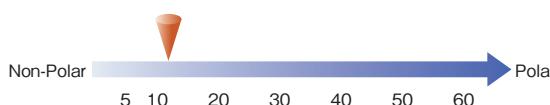
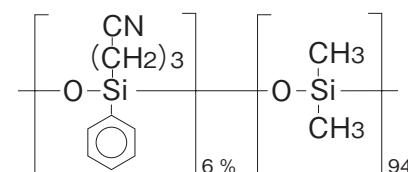
InertCap™ 1301

- 6 % Cyanopropylphenyl - 94 % Methylpolysiloxane
- USP Phase G43
- Medium Polar
- Cross-Linked
- Equivalent : DB-1301, HP-1301, Rtx-1301, VF-1301ms

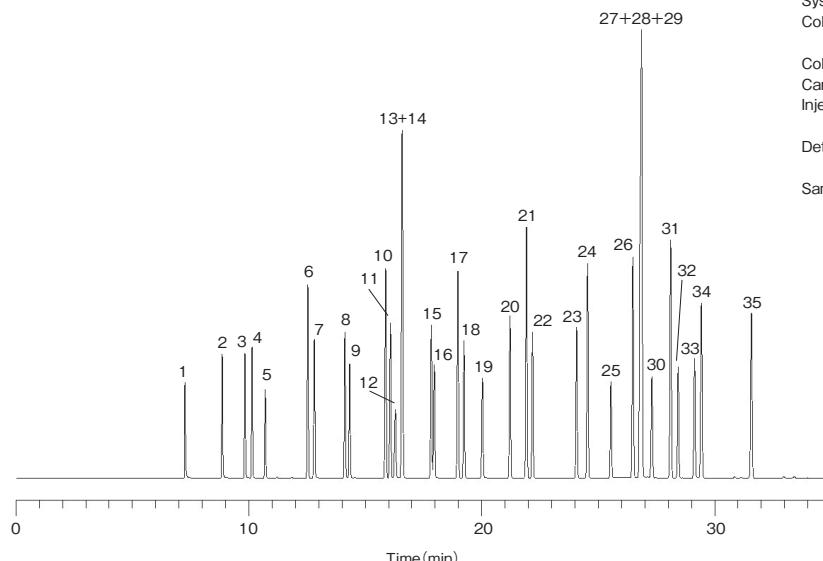
InertCap 1301 is a medium polar column incorporating 6% cyanopropylphenyl and 94% methylpolysiloxane.

Compared to InertCap 25, polarity of InertCap 1301 is slightly lower. Cyano group contained in the liquid phase offers unique selectivities.

Structure



Solvents



System : GC/FID
 Column : InertCap 1301
 0.25 mm I.D. × 60 m df = 1.00 µm
 Col. Temp. : 40 °C (5 min hold) - 5 °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	11. 2-Methyl-1-propanol(Isobutyl alcohol)	20. 4-Methyl-2-pentanone(MIBK)	28. m-Xylene
2. Ethanol	12. 2-Methoxyethanol(Methyl cellosolve)	21. Toluene	29. p-Xylene
3. Acetone	13. Benzene	22. Isobutyl acetate	30. Diacetone alcohol
4. 2-Propanol(Isopropyl alcohol)	14. Isopropyl acetate	23. n-Butyl acetate	31. o-Xylene
5. Methyl acetate	15. 1-Butanol	24. Ethylcyclohexane	32. 2-Ethoxyethyl acetate(Cellosolve acetate)
6. n-Hexane	16. 1-Methoxy-2-propanol (Propylene glycol monomethyl ether)	25. 2-Methoxyethyl acetate (Methyl cellosolve acetate)	33. 2-Butoxyethanol(Butyl cellosolve)
7. 1-Propanol	17. Methylcyclohexane	26. Ethylbenzene	34. Cyclohexanone
8. 2-Butanone(MEK)	18. n-Propyl acetate	27. 1-Methoxy-2-propyl acetate (Propylene glycol monomethyl ether acetate)	35. 2-Methylcyclohexanone
9. Ethyl acetate	19. 2-Ethoxyethanol(Cellosolve)		
10. Cyclohexane			

[InertCap™ 1301]

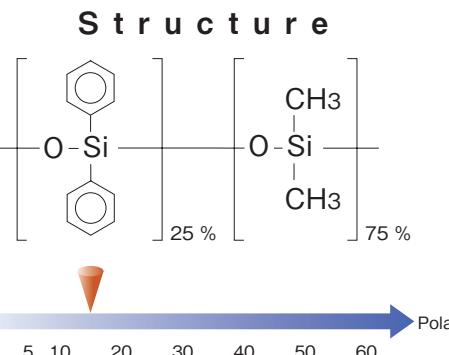
ID (mm)	Length (m)	Thickness (µm)	Max. Temperature (°C)	Cat.No.
0.25	15	0.25	iso.280-prog.300	GC60122
		0.50		GC60124
		1.00	iso.260-prog.280	GC60125
	30	0.25	iso.280-prog.300	GC60142
		0.50		GC60144
		1.00	iso.260-prog.280	GC60145
0.50	60	0.25	iso.280-prog.300	GC60162
		0.50		GC60164
	1.00	iso.260-prog.280		GC60165

ID (mm)	Length (m)	Thickness (µm)	Max. Temperature (°C)	Cat.No.
0.32	15	0.25	iso.280-prog.300	GC60222
		0.50		GC60224
		1.00	iso.260-prog.280	GC60225
0.32	30	0.25	iso.280-prog.300	GC60242
		0.50		GC60244
		1.00	iso.260-prog.280	GC60245
0.53	60	0.25	iso.280-prog.300	GC60262
		0.50		GC60264
	1.00	iso.260-prog.280		GC60265
	15	1.00	iso.260-prog.280	GC60425
	30	1.00	iso.260-prog.280	GC60445

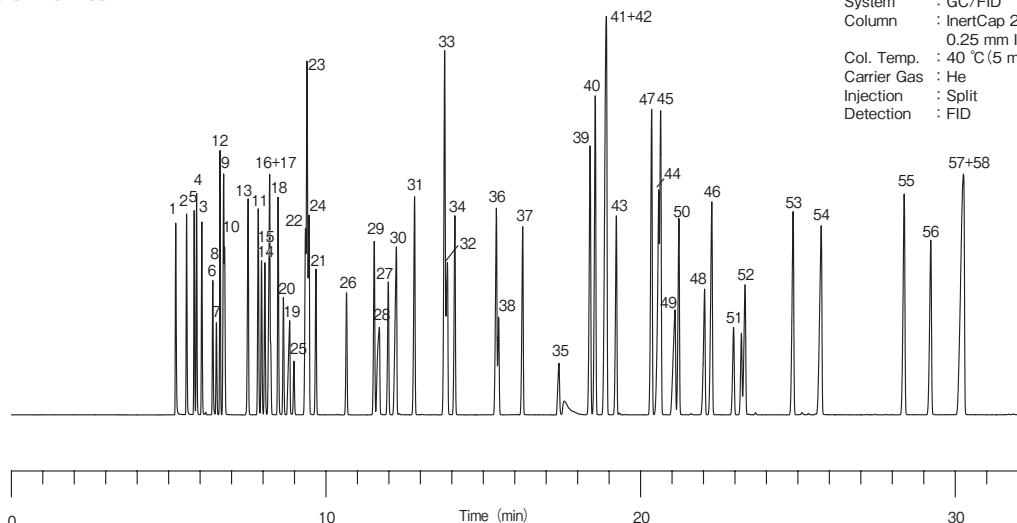
InertCap™ 25

- 25 % Phenyl - 75 % Methylpolysiloxane
- USP Phase G28
- Medium Polar
- Cross-Linked
- No Equivalent

InertCap 25 is a medium polar column incorporating 25% phenyl and 75% methylpolysiloxane. With different selectivities compared to other medium polar columns, InertCap 25 is useful to identify and quantitate for a variety of analyses.



Solvents



System : GC/FID
Column : InertCap 25
0.25 mm I.D. × 60 m df = 0.25 µm
Col. Temp. : 40 °C (5 min hold) – 4 °C/min – 230 °C
Carrier Gas : He
Injection : Split
Detection : FID

- | | | | | |
|--------------------------------|------------------------------|---------------------------|-------------------------|-------------------------------|
| 1. Methanol | 13. 2-Butanol | 25. Carbon Tetrachloride | 37. n-Butyl acetate | 49. Butyl cellosolve |
| 2. Ethanol | 14. cis-1,2-Dichloroethylene | 26. Trichloroethylene | 38. Tetrachloroethylene | 50. n-Amyl acetate |
| 3. Acetone | 15. Ethyl acetate | 27. 1,4-Dioxane | 39. Chlorobenzene | 51. 1,1,2,2-tetrachloroethane |
| 4. i-Propanol | 16. Chloroform | 28. Ethyl cellosolve | 40. Ethylbenzene | 52. Methylcyclohexanol |
| 5. Ethyl ether | 17. i-Butanol | 29. n-Propyl acetate | 41. m-Xylene | 53. Methylcyclohexanone |
| 6. Methyl acetate | 18. Tetrahydrofuran | 30. i-Amyl alcohol | 42. p-Xylene | 54. Phenol |
| 7. Dichloromethane | 19. Methyl cellosolve | 31. Methyl butyl ketone | 43. i-Amyl acetate | 55. o-Dichlorobenzene |
| 8. Carbon disulfide | 20. 1,1,1-Trichloroethane | 32. n-Amyl alcohol | 44. Cyclohexanol | 56. o-Cresol |
| 9. n-Propanol | 21. 1,2-Dichloroethane | 33. Toluene | 45. Styrene | 57. p-Cresol |
| 10. trans-1,2-Dichloroethylene | 22. i-Propyl acetate | 34. i-Butyl acetate | 46. Cyclohexanone | 58. m-Cresol |
| 11. Methyl ethyl ketone | 23. Benzene | 35. N,N-Dimethylformamide | 47. o-Xylene | |
| 12. Hexane | 24. n-Butanol | 36. Methyl n-butyl ketone | 48. Cellosolve acetate | |

[InertCap™ 25]

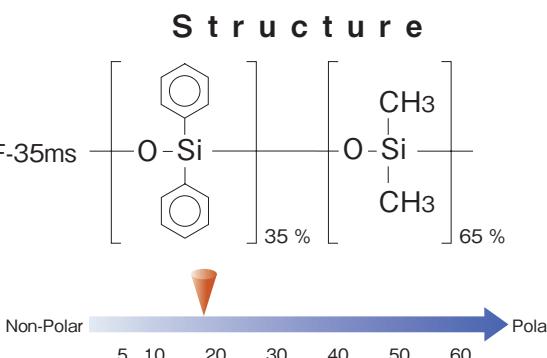
ID (mm)	Length (m)	Thickness (µm)	Max. Temperature (°C)	Cat.No.
0.25	15	0.25	iso.280-prog.300	GC62122
		0.50		GC62124
		1.00	iso.260-prog.280	GC62125
	30	0.25	iso.280-prog.300	GC62142
		0.50		GC62144
		1.00	iso.260-prog.280	GC62145
0.32	60	0.25	iso.280-prog.300	GC62162
		0.50		GC62164
		1.00	iso.260-prog.280	GC62165
	30	1.00	iso.260-prog.280	GC62425
		1.00	iso.260-prog.280	GC62445

ID (mm)	Length (m)	Thickness (µm)	Max. Temperature (°C)	Cat.No.
15	15	0.25	iso.280-prog.300	GC62222
		0.50		GC62224
	30	1.00	iso.260-prog.280	GC62225
30	30	0.25	iso.280-prog.300	GC62242
		0.50		GC62244
	60	1.00	iso.260-prog.280	GC62245
60	60	0.25	iso.280-prog.300	GC62262
		0.50		GC62264
	30	1.00	iso.260-prog.280	GC62265
0.53	15	1.00	iso.260-prog.280	GC62425
	30	1.00	iso.260-prog.280	GC62445

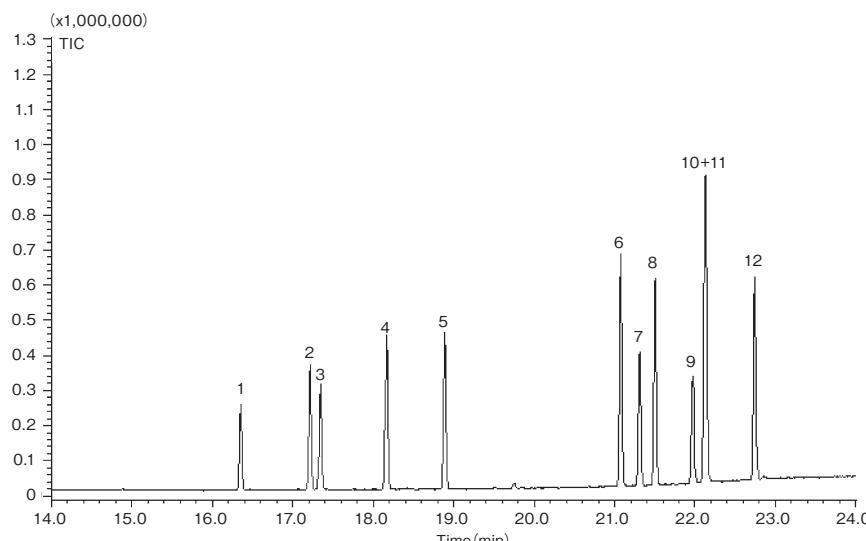
InertCap™ 35

- 35 % Phenyl - 65 % Methylpolysiloxane
- USP Phase G42
- Medium Polar
- Cross-Linked
- Equivalent : DB-35ms, DB-35, HP-35ms, HP-35, Rtx-35, VF-35ms

InertCap 35 is a medium polar column incorporating 35% phenyl and 65% methylpolysiloxane. With a stronger polarity than InertCap 25, InertCap 35 is optimal for the analyses of semi volatile compounds or solvent.



Pesticides



System : GC/MS
 Column : InertCap 35
 0.25 mm I.D. × 30 m df = 0.25 μ m
 Col. Temp. : 60 °C - 10 °C/min - 290 °C (7 min hold)
 Carrier Gas : He 35cm/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. o,p'-DDD
9. Endrin
10. p,p'-DDD
11. o,p'-DDT
12. p,p'-DDT

[InertCap™ 35]

ID (mm)	Length (m)	Thickness (μ m)	Max. Temperature (°C)	Cat.No.
0.25	15	0.25	iso.280-prog.300	GC63122
		0.50		GC63124
		1.00		GC63125
	30	0.25	iso.280-prog.300	GC63142
		0.50		GC63144
		1.00		GC63145
	60	0.25	iso.280-prog.300	GC63162
		0.50		GC63164
		1.00		GC63165
0.32	15	0.25	iso.280-prog.300	GC63222
		0.50		GC63224
		1.00		GC63225
	30	0.25	iso.280-prog.300	GC63242
		0.50		GC63244
		1.00		GC63245
	60	0.25	iso.280-prog.300	GC63262
		0.50		GC63264
		1.00		GC63265
0.53	15	1.00	iso.260-prog.280	GC63425
	30	0.50	iso.280-prog.300	GC63444
		1.00	iso.260-prog.280	GC63445

InertCap™ 1701

- 14 % Cyanopropylphenyl - 86 % Methylpolysiloxane

- USP Phase G46

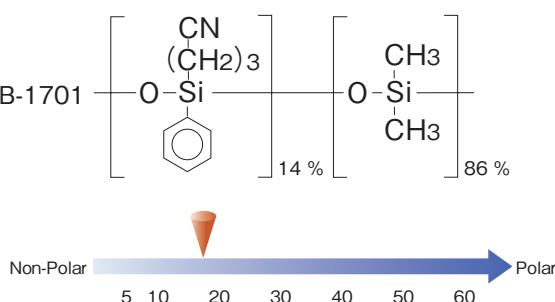
- Medium Polar

- Cross-Linked

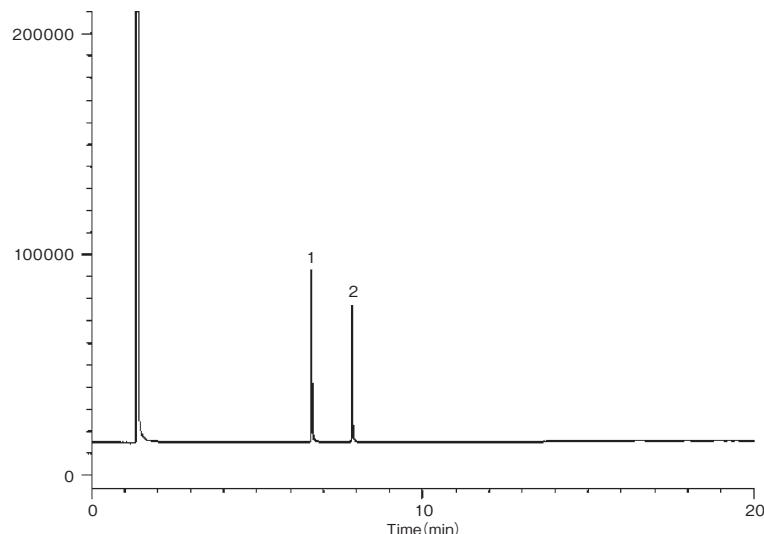
- Equivalent : DB-1701, HP-1701, Rtx-1701, VF-1701ms, SPB-1701

InertCap 1701 is a medium polar column incorporating 14% cyanopropylphenyl and 86% methylpolysiloxane. Containing the same cyano group as InertCap 1301 and with stronger polarity compared to InertCap 25, InertCap 1701 is optimal for pesticides screening analyses.

Structure



Glycol and glycerin



System : GC/FID
 Column : InertCap 1701
 0.32 mm I.D. ×30 m df = 1.00 μ m
 Col. Temp. : 100 °C - 7.5 °C - 220 °C (4 min hold)
 Carrier Gas : He 100 kPa
 Injection : Split 1:20 220 °C
 Detection : FID Range10⁰ 250 °C
 Sample Size : 0.5 mg/mL 1 μ L

1. Diethylene glycol
 2. Glycerin

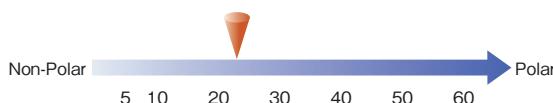
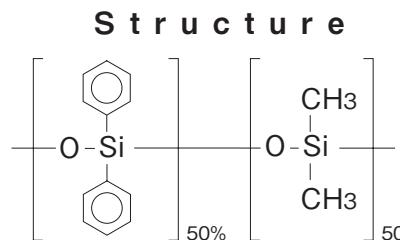
[InertCap™ 1701]

ID (mm)	Length (m)	Thickness (μ m)	Max. Temperature (°C)	Cat.No.
0.25	15	0.25	iso.280-prog.300	GC61122
		0.50		GC61124
		1.00		GC61125
	30	0.25	iso.280-prog.300	GC61142
		0.50		GC61144
		1.00		GC61145
	60	0.25	iso.280-prog.300	GC61162
		0.50		GC61164
		1.00		GC61165
0.32	15	0.25	iso.280-prog.300	GC61222
		0.50		GC61224
		1.00		GC61225
	30	0.25	iso.280-prog.300	GC61242
		0.50		GC61244
		1.00		GC61245
	60	0.25	iso.280-prog.300	GC61262
		0.50		GC61264
		1.00		GC61265
0.53	15	1.00	iso.260-prog.280	GC61425
	30	1.00	iso.260-prog.280	GC61445

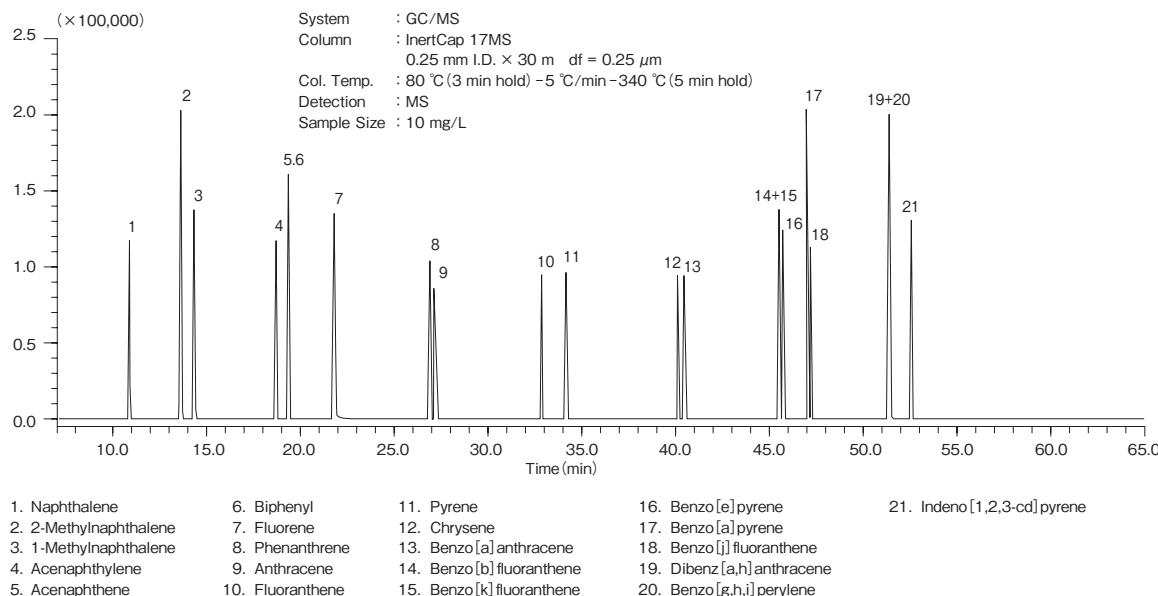
InertCap™ 17MS

- 50 % Phenyl - 50 % Methylpolysiloxane
- USP Phase G3
- Medium Polar
- Cross-Linked
- Ultra Low Bleed
- Equivalent : DB-17ms, Rxi-17, VF-17ms, SPB-17

InertCap 17MS is a medium polar column incorporating 50% phenyl and 50% methylpolysiloxane, designed for GC/MS. InertCap 17MS realizes the world highest inertness and lowest bleeding, and is optimal for microanalyses such as pesticides analyses.



Aromatic hydrocarbons



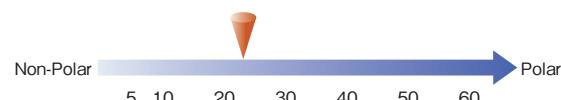
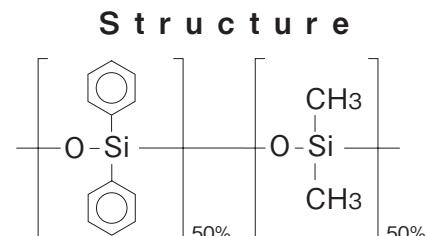
[InertCap™ 17MS]

ID (mm)	Length (m)	Thickness (μ m)	Max. Temperature (°C)	Cat.No.
0.25	15	0.25	iso.320-prog.340	GC20122
	30	0.25	iso.320-prog.340	GC20142
	60	0.25	iso.320-prog.340	GC20162
0.32	15	0.25	iso.320-prog.340	GC20222
	30	0.25	iso.320-prog.340	GC20242
	60	0.25	iso.320-prog.340	GC20262

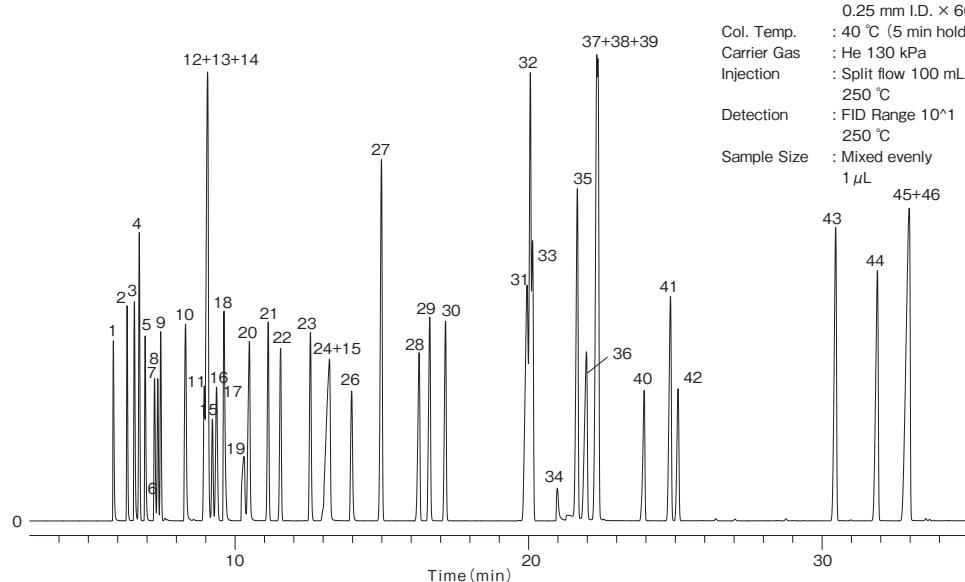
InertCap™ 17

- 50 % Phenyl - 50 % Methylpolysiloxane
- USP Phase G3
- Medium Polar
- Cross-Linked
- Equivalent : DB-17, HP-50, Rtx-50, CP-Sil 24CB, SPB-50

InertCap 17 is a medium polar column incorporating 50% phenyl and 50% methylpolysiloxane. With stronger polarity than InertCap 35, InertCap 17 is optimal for general and pesticides analyses.



Organic solvents



System	: GC/FID
Column	: InertCap 17 0.25 mm I.D. × 60 m df = 0.25 µm
Col. Temp.	: 40 °C (5 min hold) - 4 °C/min - 230 °C (5 min hold)
Carrier Gas	: He 130 kPa
Injection	: Split flow 100 mL/min 250 °C
Detection	: FID Range 10^1 250 °C
Sample Size	: Mixed evenly 1 µL

- | | | | | |
|-------------------------------|------------------------------|---------------------------|----------------------------|-------------------------------|
| 1. Methanol | 11. cis-1,2-Dichloroethylene | 21. 1,2-Dichloroethane | 31. p-Xylene | 41. Cyclohexanone |
| 2. Ethyl ether | 12. Methyl ethyl ketone | 22. Trichloroethylene | 32. m-Xylene | 42. 1,1,2,2-Tetrachloroethane |
| 3. i-Propanol | 13. i-Butanol | 23. n-Propyl acetate | 33. Chlorobenzene | 43. o-Dichlorobenzene |
| 4. n-Hexane | 14. Ethyl acetate | 24. i-Amyl alcohol | 34. N,N-Dimethyl formamide | 44. o-Cresol |
| 5. Acetone | 15. Chloroform | 25. Ethyl cellosolve | 35. o-Xylene | 45. p-Cresol |
| 6. Carbon disulfide | 16. 1,1,1-Trichloroethane | 26. 1,4-Dioxane | 36. 1-Methylcyclohexanol | 46. m-Cresol |
| 7. Methyl acetate | 17. Carbon Tetrachloride | 27. Toluene | 37. Cyclohexanol | |
| 8. Dichloromethane | 18. Tetrahydrofuran | 28. Tetrachloroethylene | 38. Butyl cellosolve | |
| 9. trans-1,2-Dichloroethylene | 19. Methylcellosolve | 29. Methyl-n-butyl ketone | 39. Styrene | |
| 10. 2-Butanol | 20. n-Butanol | 30. n-Butyl acetate | 40. Cellosolve acetate | |

[InertCap™ 17]

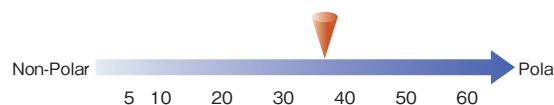
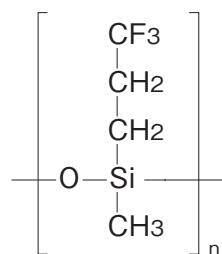
ID (mm)	Length (m)	Thickness (µm)	Max. Temperature (°C)	Cat.No.
0.25	15	0.25	iso.320-prog.340	GC65122
	30	0.15	iso.320-prog.340	GC65141
	60	0.25		GC65142
0.32	30	0.15	iso.320-prog.340	GC65241
	60	0.25		GC65242
0.53	15	1.00	iso.300-prog.320	GC65425
	30	1.00	iso.300-prog.320	GC65445

InertCap™ 210

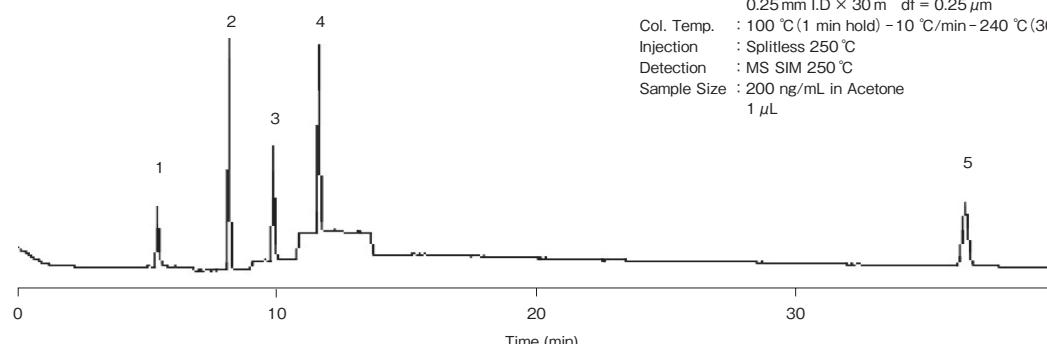
- 50 % Trifluoropropyl - 50% Methylpolysiloxane
- USP Phase G6
- Medium Polar
- Cross-Linked
- Excellent separation for organophosphorous pesticides
- Equivalent : DB-210, Rtx-200, VF-200ms

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

Structure



■ Organophosphorous pesticides



【 InertCap™ 210 】

ID (mm)	Length (m)	Thickness (µm)	Max. Temperature (°C)	Cat.No.
0.25	30	0.25	iso.240-prog.260	GC66142
0.32	30	0.25	iso.240-prog.260	GC66242
0.53	15	1.00	iso.220-prog.240	GC66425
	30	1.00	iso.220-prog.240	GC66445

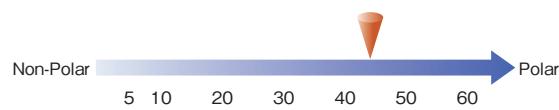
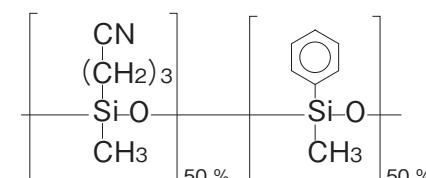
InertCap™ 225

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

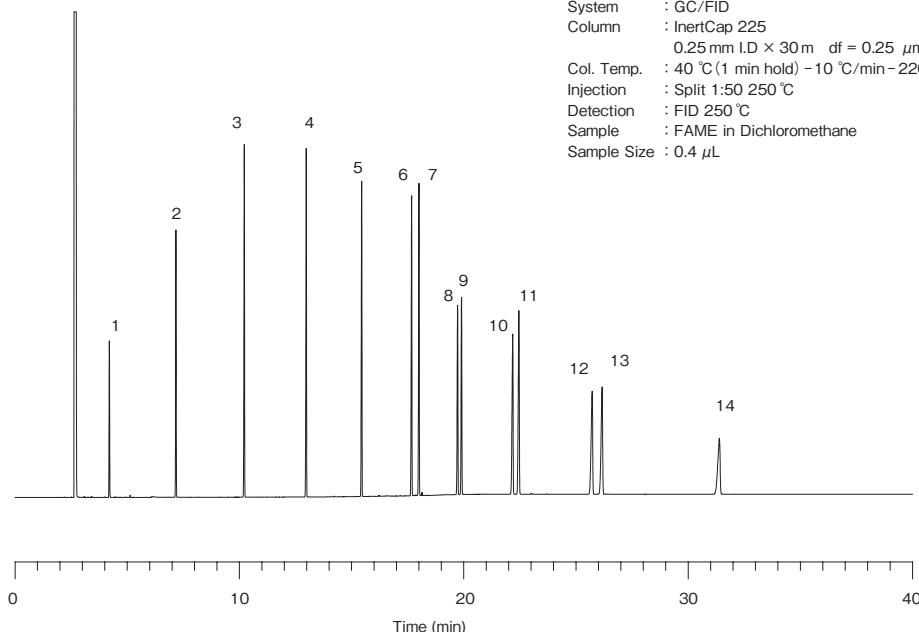
InertCap 225 is a medium polar column incorporating 50% cyanopropylmethyl and 50% phenylmethylpolysiloxane.

Cyano group contained in the liquid phase with triple bond retains compounds with high unsaturation degree strong by its dipole function. Therefore InertCap 225 is optimal for geometrical isomer analyses.

Structure



FAME (Fatty Acid Methyl Ester)



- | | | |
|-----------------------|--------------------------|-----------------------------|
| 1. Methyl Butanoate | 6. Methyl Tetradecanoate | 11. Methyl Oleate |
| 2. Methyl Hexanoate | 7. Methyl Myristoleate | 12. Methyl Eicosanoate |
| 3. Methyl Octanoate | 8. Methyl Hexadecanoate | 13. Methyl-cis-11-Eicoseate |
| 4. Methyl Decanoate | 9. Methyl Palmitelaidate | 14. Methyl Docosanoate |
| 5. Methyl Dodecanoate | 10. Methyl Octadecanoate | |

System : GC/FID
 Column : InertCap 225
 0.25 mm I.D. × 30 m df = 0.25 μm
 Col. Temp. : 40 °C (1 min hold) – 10 °C/min – 220 °C (30 min hold)
 Injection : Split 1:50 250 °C
 Detection : FID 250 °C
 Sample : FAME in Dichloromethane
 Sample Size : 0.4 μL

[InertCap™ 225]

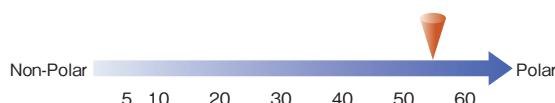
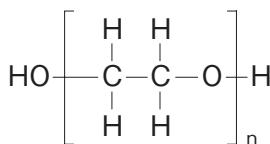
ID (mm)	Length (m)	Thickness (μm)	Max. Temperature (°C)	Cat.No.
0.25	30	0.25	iso.220-prog.240	GC66642
0.32	30	0.25	iso.220-prog.240	GC66742
0.53	30	0.50	iso.220-prog.240	GC66844

InertCap™ Pure-WAX

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

InertCap Pure-WAX is a strong polar column incorporating polyethylene glycol. Newly developed inner treatment technology, InertCap Pure-WAX realized the highest inertness among the market available columns. InertCap Pure-WAX is a optimal column for analyses of acidic compounds and/or basic compounds that existing WAX columns were not capable to analyze.

Structure

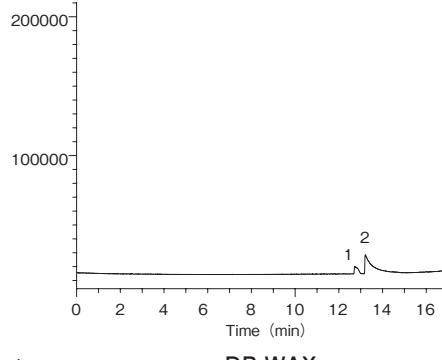
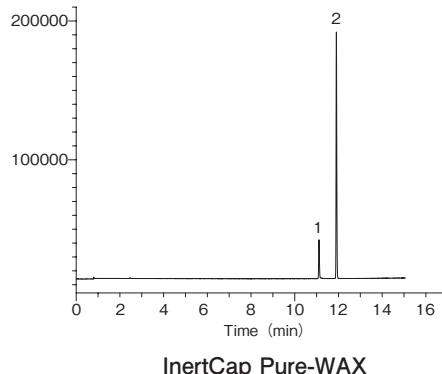


[Comparison data]

■ Acidic compounds

System :GC/FID
Column :0.25 mm I.D. × 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 Range10'0 240 °C
Sample Size :5 mg/mL 0.4 μL

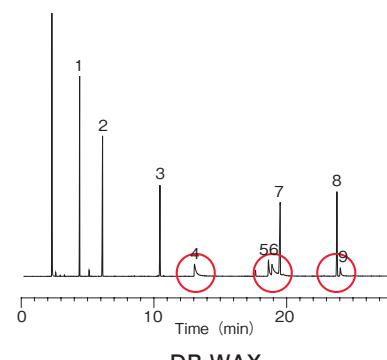
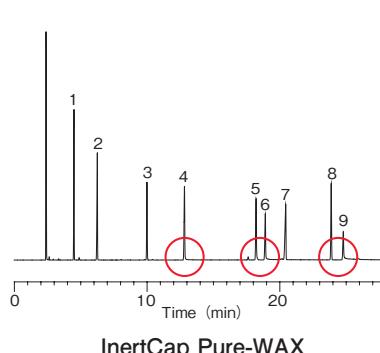
1. Acrylic acid
2. Methacrylic acid



■ Basic compounds

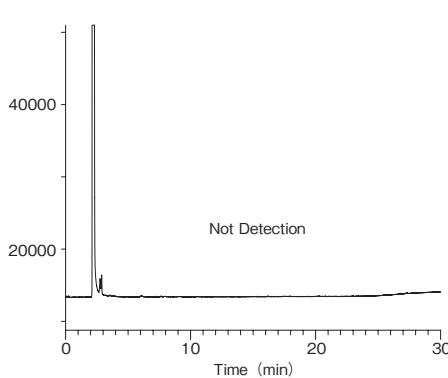
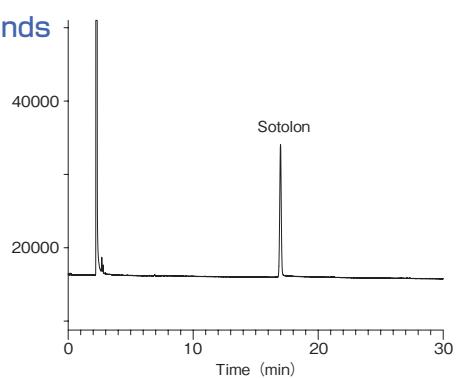
System :GC/FID
Column :0.25 mm I.D. × 30 m df = 0.25 μm
Col. Temp. :60 °C–4 °C/min - 250 °C
Injection :250 °C
Detection :250 °C
Sample Size :0.1 mg/mL in methanol 0.2 μL

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



■ Metal coordination compounds

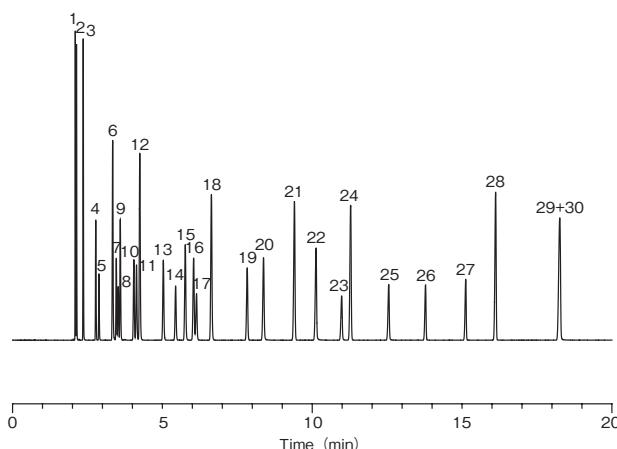
System :GC/FID
Column :0.25 mm I.D. × 30 m df = 0.25 μm
Col. Temp. :160 °C Isothermal
Carrier Gas :He 100 kPa
Injection :Split flow 50 mL/min 240 °C
Detection :FID Range10'0 240 °C
Sample Size :1 mg/mL in Ethanol 1 μL



Solvents

System : GC/FID
 Column : InertCap Pure-WAX
 0.25 mm I.D. × 30 m df = 0.25 µm
 Col. Temp. : 40 °C (5 min hold) – 5 °C/min – 200 °C
 Carrier Gas : He 100 kPa
 Injection : Split 1 : 80 250 °C
 Detection : FID Range 10⁰–260 °C
 Sample Size : 0.1 µL

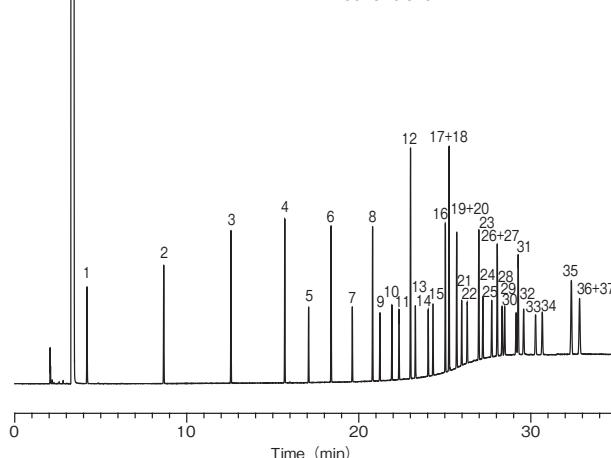
- | | | |
|------------------------|-----------------------------|------------------------------|
| 1. Hexane | 11. iso-Propanol | 21. Ethylbenzene |
| 2. Cyclopentane | 12. Benzene | 22. n-Butanol |
| 3. Cyclohexane | 13. n-Propylacetate | 23. Methylcellosolve |
| 4. Acetone | 14. Trichloroethylene | 24. o-Xylene |
| 5. Methylacetate | 15. Methyl iso-butyl ketone | 25. Ethylcellosolve |
| 6. Cycloheptane | 16. iso-Butylacetate | 26. Methylcellosolve acetate |
| 7. Ethylacetate | 17. Tetrachloroethylene | 27. Ethylcellosolve acetate |
| 8. Methanol | 18. Toluene | 28. α-Methylstyrene |
| 9. Methyl ethyl ketone | 19. n-Butylacetate | 29. n-Butylcellosolve |
| 10. Ethanol | 20. iso-Butanol | 30. Cyclohexanol |



Fatty acid methylester

System : GC/FID
 Column : InertCap Pure-WAX
 0.25 mm I.D. × 30 m df = 0.25 µm
 Col. Temp. : 50 °C (5 min hold) – 5 °C/min – 260 °C (30 min hold)
 Carrier Gas : He 100 kPa
 Injection : Split 1 : 80 250 °C
 Detection : FID Range 10⁰–260 °C
 Sample Size : 0.1 µL

- | | | | |
|-----------|--------------|--------------|-------------|
| 1. C4:0 | 11. C15:1 | 20. C18:2n6t | 31. C22:0 |
| 2. C6:0 | 12. C16:0 | 21. C18:3n6 | 32. C22:1n9 |
| 3. C8:0 | 13. C16:1 | 22. C18:3n3 | 33. C22:2 |
| 4. C10:0 | 14. C17:0 | 23. C20:0 | 34. C23:0 |
| 5. C11:0 | 15. C17:1 | 24. C20:1n9 | 35. C24:0 |
| 6. C12:0 | 16. C18:0 | 25. C20:2 | 36. C22:6n9 |
| 7. C13:0 | 17. C18:1n9c | 26. C20:3n6 | 37. C24:1n9 |
| 8. C14:0 | 18. C18:1n9t | 27. C20:4n6 | |
| 9. C14:1 | 19. C18:2n6c | 28. C21:0 | |
| 10. C15:0 | | 29. C20:3n3 | |
| | | 30. C20:5n3 | |



InertCap™ Pure-WAX

ID (mm)	Length (m)	Thickness (µm)	Max. Temperature (°C)	Cat.No.
0.25	30	0.25	iso.260-prog.260	GC68142
		0.50		GC68144
	60	0.25	iso.260-prog.260	GC68162
		0.50		GC68164
0.32	30	0.25	iso.260-prog.260	GC68242
		0.50		GC68244
	60	0.25	iso.260-prog.260	GC68262
		0.50		GC68264
0.53	15	1.00	iso.240-prog.240	GC68425
	30	1.00	iso.240-prog.240	GC68445
	60	1.00	iso.240-prog.240	GC68465

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

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

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

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

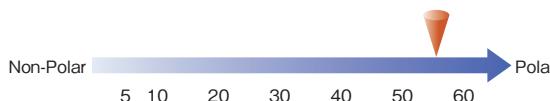
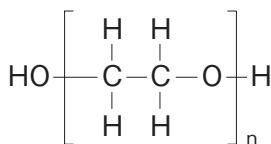
* See page 32 for more information about ProGuard and T.L.

InertCap™ WAX

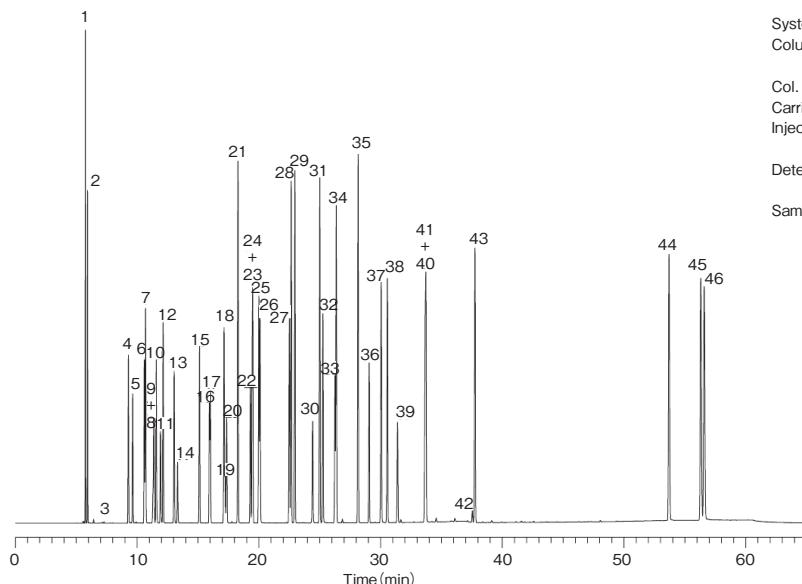
- Polyethylene Glycol (PEG)
- USP Phase G16
- Polar
- Cross-Linked
- Equivalent : DB-WAX, HP-INNOWax, Rtx-Wax, Stabilwax

InertCap WAX is a strong polar column incorporating polyethylene glycol. With a slightly stronger polarity than InertCap Pure-WAX, InertCap WAX demonstrates a high separation. It is optimal for analyses of strong polar samples such as solvent.

Structure



Solvents



1. n-Hexane	11. Methanol	21. Toluene	31. o-Xylene	41. Cyclohexanol
2. Ethyl ether	12. Methyl ethyl ketone	22. 1,4-Dioxane	32. i-Amyl alcohol	42. 1,1,2,2-Tetrachloroethane
3. Carbon disulfide	13. i-Propanol	23. n-Butyl acetate	33. Ethyl cellosolve	43. o-Dichlorobenzene
4. Acetone	14. Dichloromethane	24. 1,2-Dichloroethane	34. Chlorobenzene	44. o-Cresol
5. Methyl acetate	15. n-Propyl acetate	25. Methyl-n-butyl ketone	35. Styrene	45. p-Cresol
6. trans-1,2-Dichloroethylene	16. cis-1,2-Dichloroethylene	26. i-Butanol	36. Cellosolve acetate	46. m-Cresol
7. Tetrahydrofuran	17. Trichloroethylene	27. n-Butanol	37. Cyclohexanone	
8. Carbon Tetrachloride	18. 2-Butanol	28. o-Xylene	38. 1-Methylcyclohexanol	
9. 1,1,1-Trichloroethane	19. Chloroform	29. m-Xylene	39. N,N-Dimethyl formamide	
10. Ethyl acetate	20. Tetrachloroethylene	30. Methyl cellosolve	40. Butyl cellosolve	

[InertCap™ WAX]

ID (mm)	Length (m)	Thickness (μm)	Max. Temperature (°C)	Cat.No.
0.25	15	0.25	iso.250-prog.260	GC67122
	30	0.25	iso.250-prog.260	GC67142
		0.50		GC67144
	60	0.25	iso.250-prog.260	GC67162
		0.50		GC67164

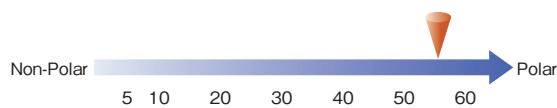
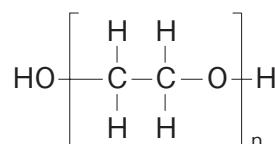
ID (mm)	Length (m)	Thickness (μm)	Max. Temperature (°C)	Cat.No.
0.32	15	0.25	iso.250-prog.260	GC67222
	30	0.25	iso.250-prog.260	GC67242
		0.50		GC67244
	60	0.25	iso.250-prog.260	GC67262
		0.50		GC67264
0.53	15	1.00	iso.230-prog.240	GC67425
		2.00		GC67427
	30	1.00	iso.230-prog.240	GC67445
		2.00		GC67447
		3.00		GC67449
	60	1.00	iso.230-prog.240	GC67465

InertCap™ WAX-HT

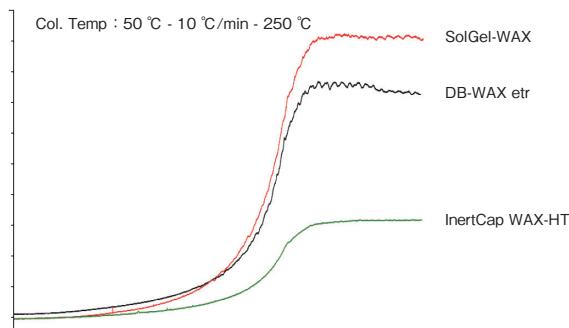
- Polyethylene Glycol (PEG)
- USP Phase G16
- Polar
- Cross-Linked
- Equivalent : DB-WAXetr, SolGel-WAX

InertCap WAX-HT is a strong polar column incorporating polyethylene glycol. By increasing the heat resistance of liquid phase, InertCap WAX-HT realized the maximum temperature 280 °C. Being optimal for the analyses of polar samples such as solvents, InertCap WAX-HT can also fit for the analyses of high-boiling compounds.

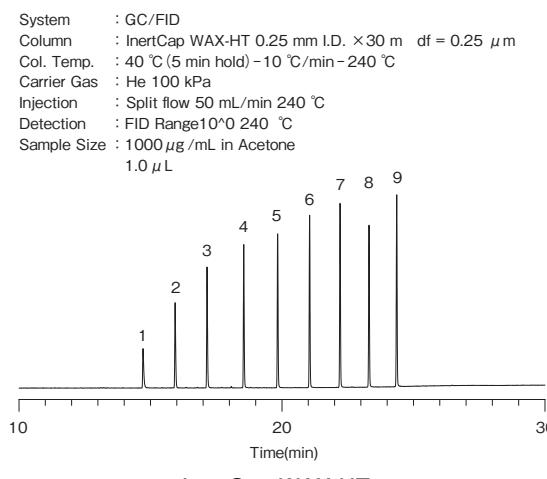
Structure



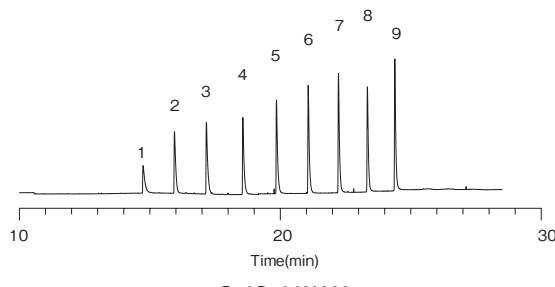
Comparison of column bleed



Short-chain fatty acid



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



[InertCap™ WAX-HT]

ID (mm)	Length (m)	Thickness (μm)	Max. Temperature (°C)	Cat.No.
0.25	30	0.25	iso.270-prog.280	GC68542
		0.50	iso.260-prog.270	GC68544
	60	0.25	iso.270-prog.280	GC68562
		0.50	iso.260-prog.270	GC68564

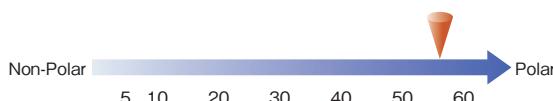
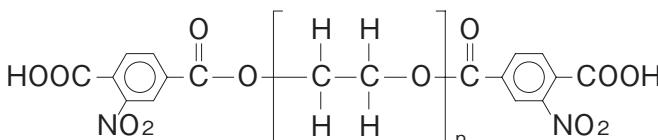
ID (mm)	Length (m)	Thickness (μm)	Max. Temperature (°C)	Cat.No.
0.32	30	0.25	iso.270-prog.280	GC68642
		0.50	iso.260-prog.270	GC68644
	60	0.25	iso.270-prog.280	GC68662
		0.50	iso.260-prog.270	GC68664
0.53	15	1.00	iso.250-prog.260	GC68725
	30	1.00	iso.250-prog.260	GC68745
	60	1.00	iso.250-prog.260	GC68765

InertCap™ FFAP

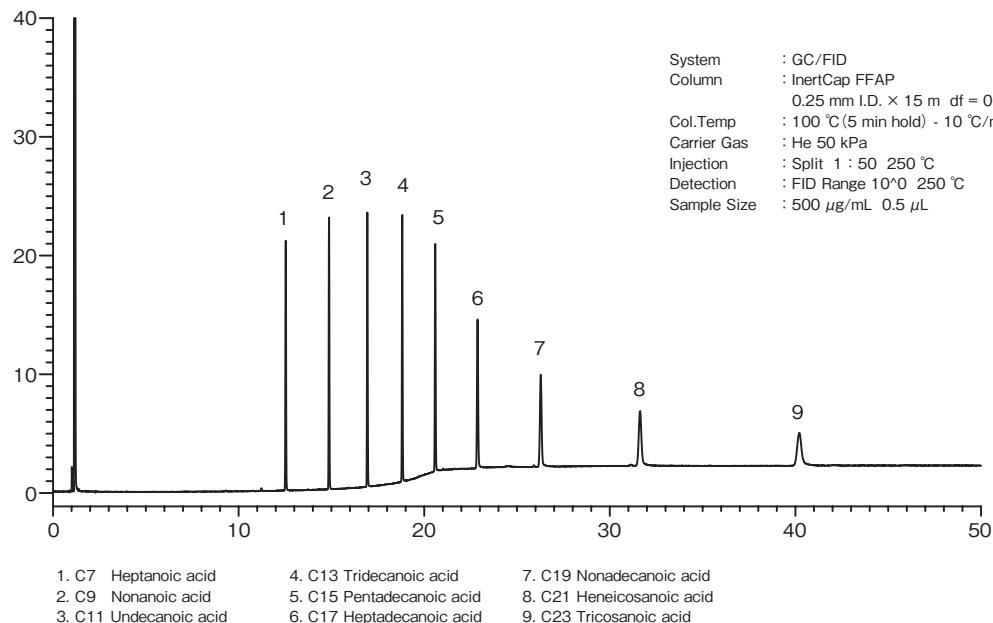
- Nitroterephthalic acid modified Polyethylene Glycol
- USP Phase G35
- Polar
- Cross-Linked
- Equivalent : DB-FFAP, HP-FFAP, CP-WAX 58(FFAP) CB

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

Structure



Odd free fatty acids



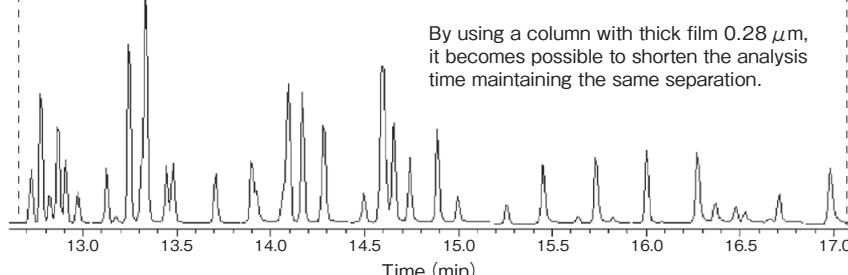
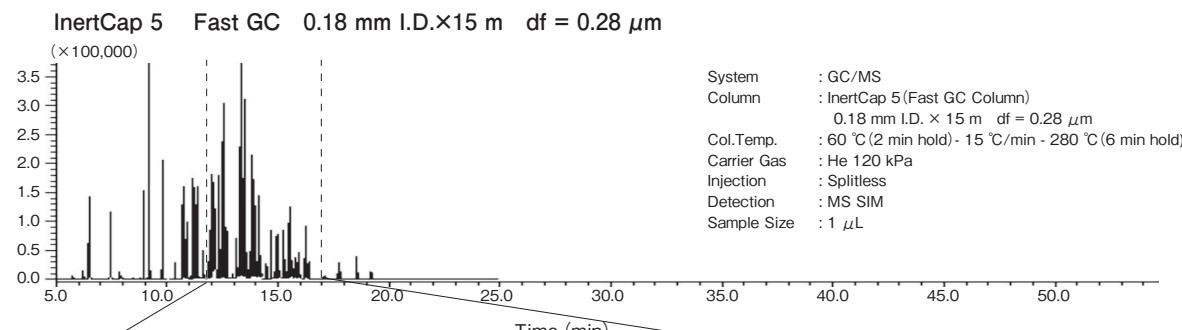
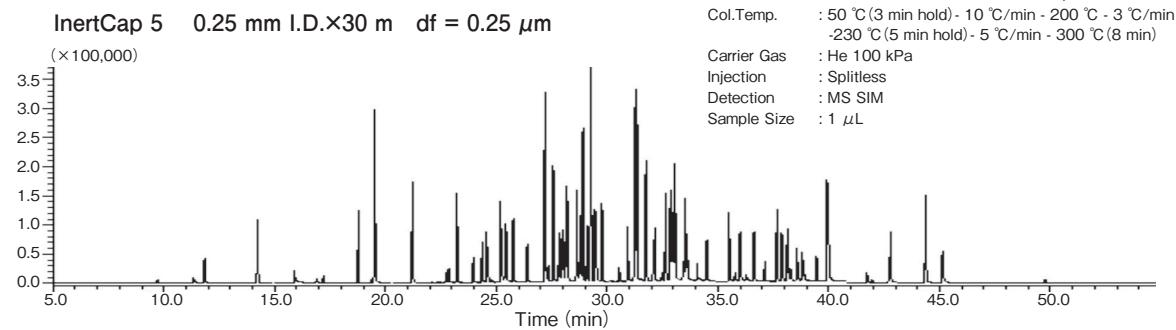
[InertCap™ FFAP]

ID (mm)	Length (m)	Thickness (μm)	Max. Temperature (°C)	Cat.No.
0.25	15	0.25	iso.240-prog.250	GC28622
	30	0.25	iso.240-prog.250	GC28642
	30	0.50		GC28644
	60	0.25	iso.240-prog.250	GC28662
	60	0.50		GC28664
0.32	15	0.25	iso.240-prog.250	GC28722
	15	0.25	iso.240-prog.250	GC28742
	30	0.50		GC28744
	30	1.00		GC28745
	60	0.25	iso.240-prog.250	GC28762
	60	0.50		GC28764
	60	1.00		GC28765
0.53	15	0.50	iso.240-prog.250	GC28924
	15	1.00	iso.230-prog.240	GC28925
	30	0.25	iso.240-prog.250	GC28942
	30	0.50		GC28944
	30	1.00		GC28945

InertCap™ Fast GC Column

InertCap Fast GC is a column of ID 0.18 mm. Maintaining separation ability, InertCap Fast GC realizes fast analyses and best productivity with the existing general GC instruments.

■ 61 Pesticides



※See page 51-52 for InertCap Fast GC applications.

[InertCap™ Fast GC Column]

Phase	ID (mm)	Length (m)	Thickness (μm)	Max. Temperature (°C)	Cat.No.
InertCap 1	0.18	15	0.18	iso.325-prog.350	GC11021
			0.28		GC11022
	20	0.18	iso.325-prog.350	GC11031	
		0.28		GC11032	
InertCap 5MS/Sil	0.18	20	0.18	iso.325-prog.350	GC15031
InertCap 5	0.18	15	0.18	iso.325-prog.350	GC18021
			0.28		GC18022
	20	0.18	iso.325-prog.350	GC18031	
		0.28		GC18032	

※Other phases available upon request.

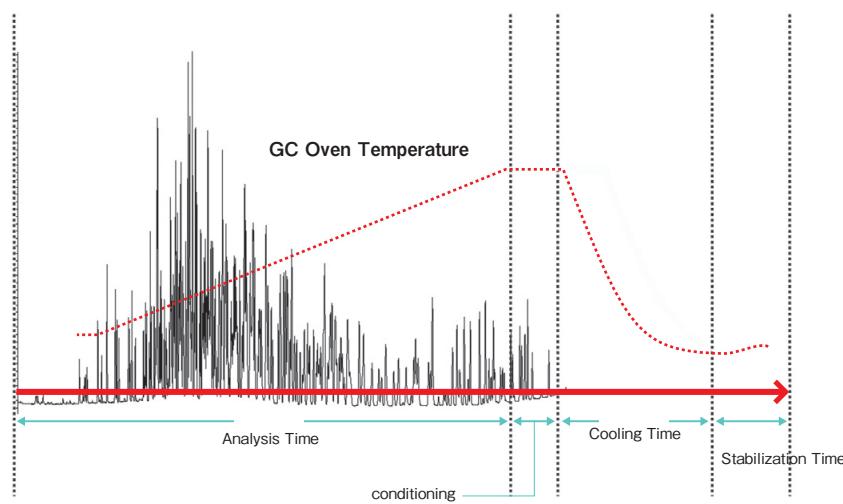
InertCap™ Fast GC Column

Effectiveness of InertCap Fast GC Column

Reducing the cost of GC,GC/MS

With InertCap Fast GC columns, it takes only half of what it used to take for pesticides analyses. Numbers of samples can be analyzed by using existing general GC instruments together with InertCap Fast GC columns. There is no need for special high pressure injector and anyone can easily use the column.

Pesticides



Downsizing Example

0.25 mm I.D. × 30 m df = 0.25 μm



0.18 mm I.D. × 20 m df = 0.18 μm



0.25 mm I.D. × 30 m df = 0.40 μm



0.18 mm I.D. × 20 m df = 0.28 μm

S p e c i a l C o l u m n s • O t h e r C o l u m n s

- InertCap™ for Amines..... 026
- InertCap CHIRAMIX 027
- AQUATIC 028
- AQUATIC-2 029
- Tailor-made columns 030
- Built-in Guard Column/Transfer Line Column .. 032

InertCap™ for Amines

- Cross-Linked
- Excellent for amine compounds from C2 ~ C10 analyses
- Ideal for the simultaneous analyses of mixed sample such as alcohol etc.
- Equivalent : CP-Volamine

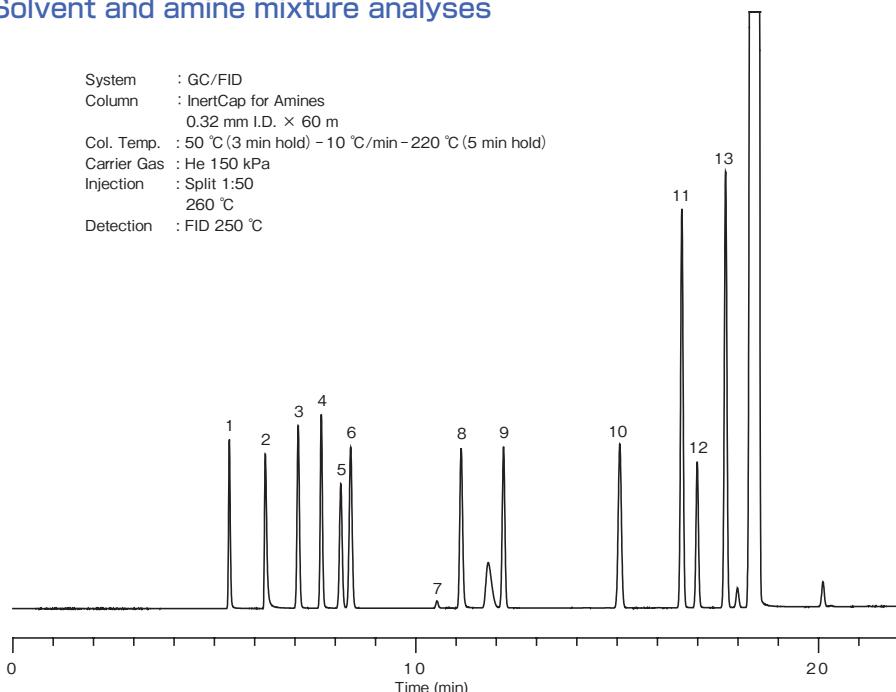
InertCap for Amines shows excellent performances for the amine compounds from C2 - C10. Basic compounds can be perfectly eluted without being adsorbed in the column.

Unlike other amines special columns, InertCap for Amines can simultaneously elute general solvents such as alcohol due to our unique neutral inert treatment technique.

Solvent and amine mixture analyses

System : GC/FID
Column : InertCap for Amines
0.32 mm I.D. × 60 m
Col. Temp. : 50 °C(3 min hold) – 10 °C/min – 220 °C (5 min hold)
Carrier Gas : He 150 kPa
Injection : Split 1:50
260 °C
Detection : FID 250 °C

1 Methanol
2 Dimethylamine
3 Ethanol
4 Acetonitrile
5 Acetone
6 Isopropanol
7 Acetic acid
8 Diethylamine
9 Ethylacetate
10 Triethylamine
11 Pyridine
12 Dimethylformamide
13 Toluene



[InertCap™ for Amines]

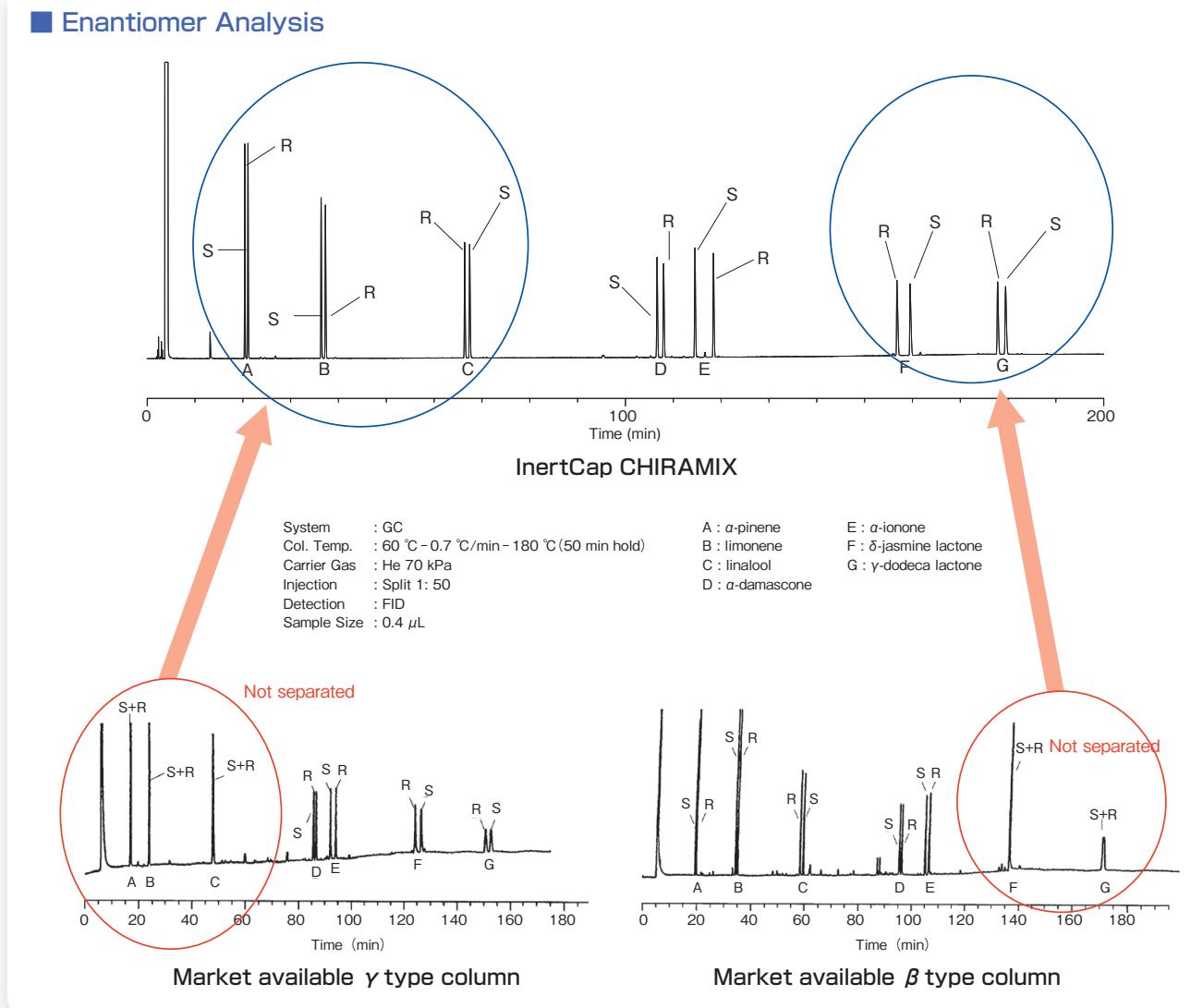
ID (mm)	Length (m)	Thickness (μm)	Max. Temperature (°C)	Cat.No.
0.32	15	—	iso.265-prog.300	GC69229
	30	—	iso.265-prog.300	GC69249
	60	—	iso.265-prog.300	GC69269

InertCap CHIRAMIX™

- Excellent for enantiomers separation
- Coated with more than 2 kinds of cyclodextrin derivatives
- Sharp peaks
- GL Sciences' original

InertCap CHIRAMIX is a specialized column for enantiomer analyses coated with a mixture consisting of more than 2 kinds of cyclodextrin derivatives. Compared to existing columns that is coated by only 1 kind of cyclodextrin, InertCap CHIRAMIX can effectively analyze wide range of compounds in a short time as the 1st choice column.

※InertCap CHIRAMIX was jointly developed with T. Hasegawa Co., Ltd.
※CHIRAMIX is a brand name of T. Hasegawa Co., Ltd.



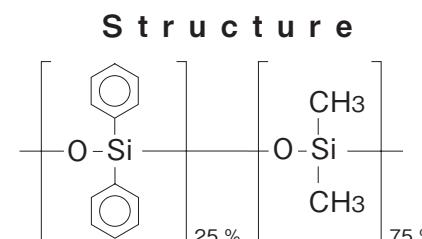
[InertCap CHIRAMIX™]

ID (mm)	Length (m)	Thickness (μ m)	Max. Temperature (°C)	Cat.No.
0.25	30	0.25	iso.180-prog.200	GC69142

AQUATIC

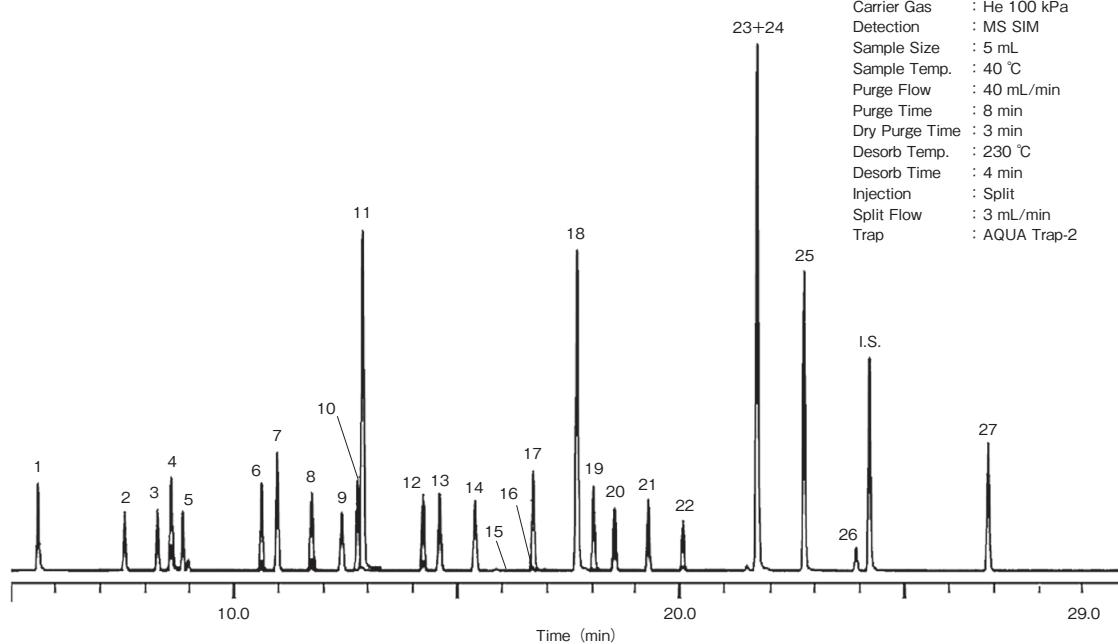
- 25 % Phenyl-75 % Methylpolysiloxane
- USP Phase G28
- Medium polar
- Cross-Linked
- No Equivalent

AQUATIC is a medium polar column incorporating 25% phenyl and 75% methylpolysiloxane, especially designed for the analyses of volatile organic compounds in water. As the column polarity is optimized, AQUATIC enables high separations. Analysis data with 33 compounds is attached to every column, and each column is guaranteed for its performance and reproducibility. AQUATIC is optimal for VOCs simultaneous analyses by Purge and Trap.



Non-Polar → Polar
5 10 20 30 40 50 60

Volatile compounds in water



- | | | | |
|-----------------------------|--------------------------|-------------------------------|---------------------------|
| 1. Vinyl chloride | 8. 1,1,1-Trichloroethane | 15. 1,4-Dioxane | 22. Dibromochloromethane |
| 2. 1,1-Dichloroethene | 9. Carbon Tetrachloride | 16. Epichlorohydrin | 23. m-Xylene |
| 3. Dichlormethane | 10. 1,2-Dichloroethane | 17. cis-1,3-Dichloropropene | 24. p-Xylene |
| 4. MTBE | 11. Benzene | 18. Toluene | 25. o-Xylene |
| 5. trans-1,2-Dichloroethene | 12. Trichloroethene | 19. trans-1,3-Dichloropropene | 26. Bromoform |
| 6. cis-1,2-Dichloroethene | 13. 1,2-Dichloropropane | 20. 1,1,2-Trichloroethane | I.S. p-Bromofluorobenzene |
| 7. Chloroform | 14. Bromodichloromethane | 21. Tetrachloroethene | 27. p-Dichlorobenzene |

- | |
|---------------------------|
| 22. Dibromochloromethane |
| 23. m-Xylene |
| 24. p-Xylene |
| 25. o-Xylene |
| 26. Bromoform |
| I.S. p-Bromofluorobenzene |
| 27. p-Dichlorobenzene |

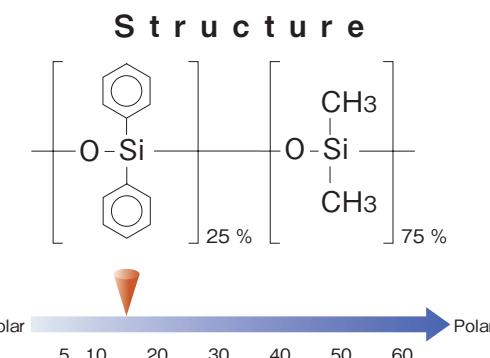
[AQUATIC]

ID (mm)	Length (m)	Thickness (μ m)	Max. Temperature (°C)	Cat.No.
0.25	60	1.00	iso.200-prog.220	GC29165
0.32	60	1.40	iso.200-prog.220	GC29266
0.53	75	2.00	iso.200-prog.220	GC29477

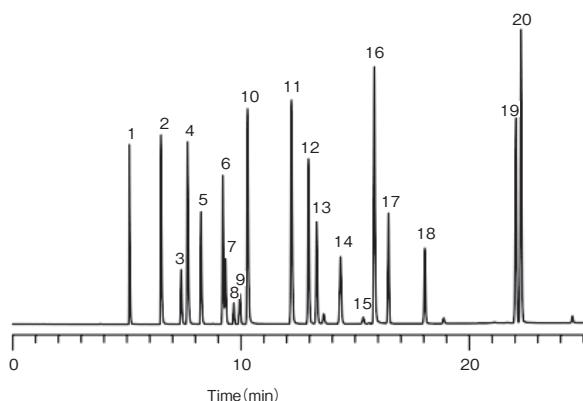
AQUATIC-2

- 25% Phenyl -75% Methylpolysiloxane
- USP Phase G28
- Medium polar
- Cross-Liked
- No Equivalent

AQUATIC-2 endures up to 260 °C. Separation pattern is almost same as AQUATIC. Selectivity to a few compounds may be slightly differ from the AQUATIC.



Solvents



System : GC/FID
 Column : AQUATIC-2
 0.25 mm I.D. × 60 m df = 1.4 μ m
 Col. Temp. : 40 °C (5 min hold) – 4 °C/min – 120 °C – 10 °C/min – 250 °C
 Carrier Gas : He 200 kPa
 Injection : Split 1:80
 Detection : FID
 Sample Size : 1 μ L

- | | | | | |
|-----------------|-------------------|----------------|-------------------------|------------------------|
| 1. Methanol | 5. Acetone | 9. n-Hexane | 13. Ethylacetate | 17. 1,2-Dichloroethane |
| 2. Ethanol | 6. Acetonitrile | 10. n-Propanol | 14. Cyclohexane | 18. Trichloroethylene |
| 3. Diethylether | 7. Methylacetate | 11. 2-Butanol | 15. Carbontetrachloride | 19. Isobutylacetate |
| 4. 2-Propanol | 8. Dichlormethane | 12. MEK | 16. 1-Butanol | 20. Toluene |

[AQUATIC-2]

ID (mm)	Length (m)	Thickness (μ m)	Max. Temperature (°C)	Cat.No.
0.25	30	1.40	iso.260-prog.260	GC19146
	60	1.40	iso.260-prog.260	GC19166
0.32	30	1.80	iso.260-prog.260	GC19247
	60	1.80	iso.260-prog.260	GC19267
0.53	30	3.00	iso.260-prog.260	GC19448
	75	3.00	iso.260-prog.260	GC19478

Tailor-made Column

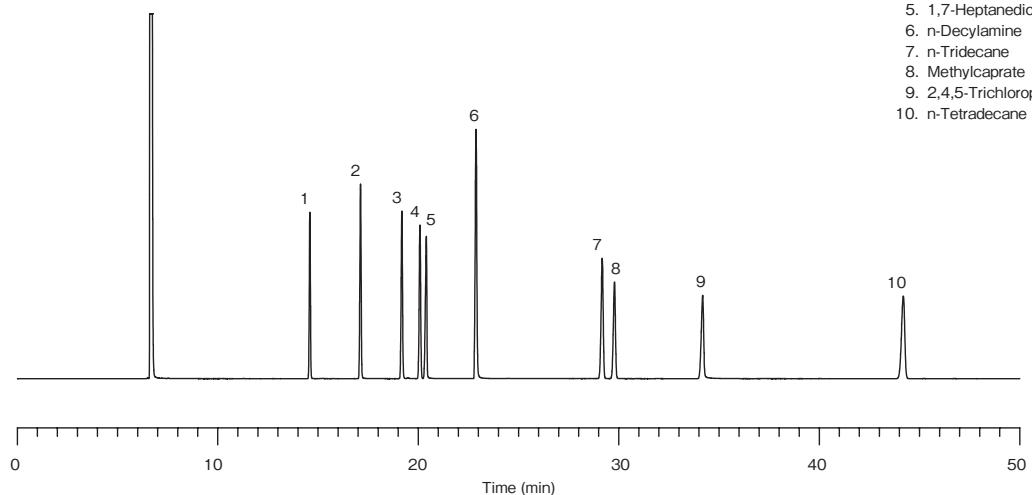
For your unique applications...!



Based on our column manufacturing technologies built after a long time experience, GL Sciences Inc. is grateful to make custom made columns. We attach inspection report to each column and guarantee the performance. We can also make guard column or transfer line "built-in" columns upon your request.

■ Example: 100 m Column

InertCap 1 0.25 mm I.D. × 100 m df = 0.50 μm



Tailor-made Column Request Form

■ To: GL Sciences Inc. International Department

TEL : +81-3-5323-6620

E-mail : world@gls.co.jp

Company

Department

Address

Name

TEL

FAX

E-mail

■ Capillary Column Details

Phase

Film Thickness μm

I.D. mm

Guard Column (if necessary) m

Length m

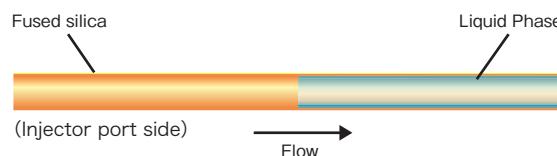
Transfer Line (if necessary) m

※Unable to supply guard column/transfer line for the following columns:
InertCap 210, InertCap 225,
InertCap WAX, AQUATIC,
AQUATIC-2
All columns with ID 0.53 mm

Built-in Guard Column & Transfer Line

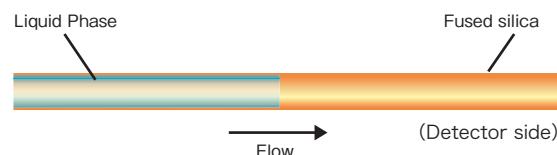
"Built-in Guard Column" InertCap™ ProGuard

InertCap ProGuard is a "guard column built-in" analytical capillary column. When analyzing samples high in matrix such as food, the guard column traps foreign substances and protects analytical column. By cutting the edge of the guard column, a longer analytical column life can be obtained. Also InertCap ProGuard acts as a retention gap column. The guard column is inert, therefore there is no need to worry when analyzing highly adsorptive compounds. There is also no worries about leakage as no connector union is used.



"Built-in Transfer Line" InertCap™ T.L.

InertCap T.L. is a "transfer line built-in" analytical column. As there is no coating to the column where touches detector which is always high in temperature, it realizes low bleeding and avoids liquid degeneration. The transfer line is inert therefore there is no need to worry when analyzing highly adsorptive compounds. There is also no worries about leakage as no connector union is used.



[InertCap™ ProGuard]

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

[InertCap™ T.L.]

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

G C A c c e s s o r i e s

●	Leak Detector	034
●	Capillary Cutter/Union	035
●	Carrier Gas Purifier	039
●	Guard Column•Retention Gap Column	040
●	GC Consumables	
	Agilent	042
	Shimadzu	044
	Thermo Scientific	046
	Varian	048

GC Accessories

Leak Detector LD229



<Specifications>

Detector	: Thermistor actuated thermal conductivity cell
Battery	: Rechargeable Ni-MH batteries
Consecutive operation	: 5 hours (with fully charged batteries)
Display	: LCD (12 X 2)
Recharger	: AC100 - 240V 50 - 60Hz 0.3 A
Operating temperature range	: 10 to 35 °C.

Indoor use

Humidity	: 85 % maximum (no condensation)
Supply voltage fluctuation	: ±10 %
Oversupply category	: category II
Pollution degree	: degree 2
Overall size	: 65 mm(W) X 37 mm(D) X 143 mm(H)
Net weight	: 310 g

*The sensitivity should be dependent on the difference between the thermal conductivities of gas and air, and a large difference results in a high sensitivity. Also, the kinds of gas and humidity should influence the sensitivity.

Description	Cat.No.
Leak Detector LD229 for EU plug	2702-19491
Leak Detector LD229 for US plug	2702-19490
Filter for LD229	2702-19395

Capillary Fineness Cutter



A diamond blade finely cuts the silica capillary tube vertically. The built-in magnifier is to check how the tube is cut, and the diamond blades can be replaced.

Description	Cat.No.
Capillary Fine Cutter GC/LC (Black)	3001-31020
Capillary Fine Cutter GC/LC replacement blade	3001-31021

Ceramic Tube Scriber

The ceramic tube scribe cuts a silica capillary column safely and firmly.



Description	Unit (pcs)	Cat.No.
Ceramic Tube Scriber	5	1010-41136

Fused Silica End Cap



Description	Color	Cat.No.	Unit (pcs)
Fused Silica End Cap (I.D. 0.15 mm~0.53 mm)	Red	1010-41140	5
	Green	1010-41141	5
	Blue	1010-41142	5

GC Accessories

Inner Seal Connector



A quartz union for connecting the fused silica capillary tubes.
also convinient for connecting guard column to an analytical column, and splitting sample flow onto two detectors.

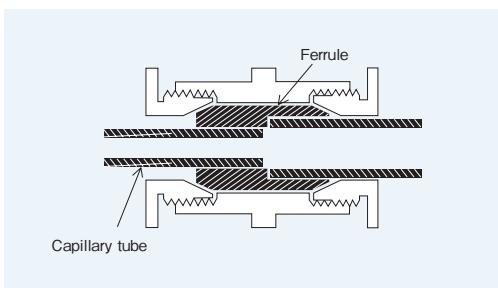
Description	Column ID (mm)	Column OD (mm)	Unit(pcs)	Cat.No.
Inner Seal Connector	0.10~0.25	0.15~0.4	5	1010-45025
	0.25~0.53	0.35~0.7	5	1010-45026
Inner Seal Y Connector	0.25~0.53	0.35~0.7	1	1010-45030

Micro Unions



This is the micro union with zero dead volume. Polyimide resin is adapted for the ferrule for better heat resistance and chemical resistance.

1 set (Cat.No.3001-25803~25858)⇒ Body 1 pcs, Male Screw 2 pcs, Ferrule 2 pcs
Ferrule(Cat.No.3001-25881~25896)⇒Replacement ferrule 2 pcs



[Micro Union]

Column ID (mm)	Column OD (mm)	1 set Cat.No.	Ferrule Cat.No.
0.10	0.2-0.3	3001-25803	3001-25881
0.25	0.3-0.4	3001-25804	3001-25882
0.32	0.4-0.5	3001-25805	3001-25883
0.53	0.7-0.8	3001-25808	3001-25884

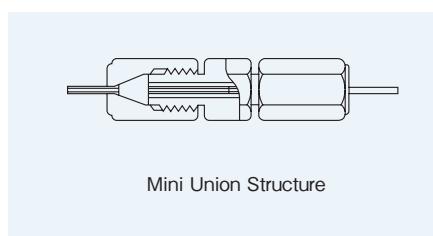
[Micro Reducing Union]

Column ID (mm)	Column OD (mm)	1 set Cat.No.	Ferrule Cat.No.
0.10-0.25	0.3-0.4	3001-25834	3001-25891
0.10-0.32	0.3-0.5	3001-25835	3001-25892
0.10-0.53	0.3-0.8	3001-25838	3001-25893
0.25-0.32	0.4-0.5	3001-25845	3001-25894
0.25-0.53	0.4-0.8	3001-25848	3001-25895
0.32-0.53	0.5-0.8	3001-25858	3001-25896

[Screw Wrench]

Description	Unit (pcs)	Cat.No.
Screw Wrench	2	3001-25860

Capillary Mini Unions



This capillary mini union offers least active spots and dead volume. Graphite ferrule MOGF/005 is for capillary tubes below O.D. 0.5mm (I.D. 0.32mm)

Mini Union			Graphite Ferrule (10 pcs)		Graphite Vespel Ferrule (10 pcs)	
Model	Column size (mm)	Cat.No.	Model	Cat.No.	Model	Cat.No.
MVSU/003	I.D.0.1 O.D.~0.3	3001-25950	MOGF/005	3001-25965	MGVF/003	3001-25973
MVSU/004	I.D.0.25 O.D.~0.4	3001-25951			MGVF/004	3001-25974
MVSU/005	I.D.0.32 O.D.~0.5	3001-25952			MGVF/005	3001-25975
MVSU/008	I.D.0.53 O.D.~0.8	3001-25953	MOGF/008	3001-25968	MGVF/008	3001-25978

Description	Cat.No.
Screw wrench for mini union 3/16×1/4 (2 pcs)	3001-25954

Pin Vice Drill Set



Description	Cat.No.
Pin Vice Drill Set	3001-24625

Septum Puller



Clean injection port septum is a must for high sensitivity analysis. Replacing it with bare hands can severely influence the analysis result. With Septum Pick, septum can be replaced easily without touching it by hand. Septum pick can also be used for removing pieces of the broken septa from the injection port.

Description	Cat.No.
Septum Puller	3001-12720

GC Accessories

Ferrule Removal Kit



Each kit has two tools: one for removing 0.4 mm adaptor ferrules and one for removing 0.8 mm adaptor ferrules.

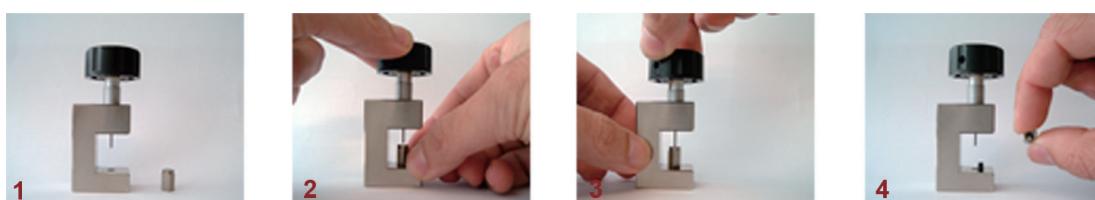
Description	Cat.No.
Ferrule Removal Kit	3001-12740

Ferrule Removal Tool

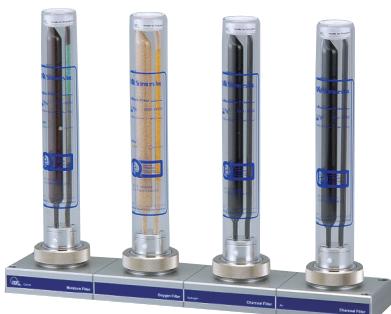


This tool helps you getting the ferrule out of the nut.

Description	Cat.No.
Ferrule Removal Tool	3001-12745



Carrier Gas Purifier



3001-18319

Super Clean™ Filter and Base Plate Kits

Description	qty	Cat.No.
1 Triple Filter Kit - 1/8" Brass Includes (1) 1 position base plate with 1/8" Brass inlet/outlet fittings and (1) Oxygen/Moisture/Hydrocarbon Trap	Kit	3001-18313
1 Triple Helium Specific Filter Kit - 1/8" Brass Includes (1) 1 position base plate with 1/8" Brass inlet/outlet fittings and (1) Oxygen/Moisture/Hydrocarbon Helium Specific Trap	Kit	3001-18314
2 Combi Filter Kit - 1/8" Brass Includes (1) 2 position base plate with 1/8" Brass inlet/outlet fittings and (2) Hydrocarbon/Moisture Trap	Kit	3001-18315
4 Filters Kit - 1/8" Brass Includes (1) 4 position base plate with 1/8" Brass inlet/outlet fittings and (1) Moisture Trap, (1) Oxygen Trap, and (2) Hydrocarbon Traps	Kit	3001-18319



3001-18350

3001-18355

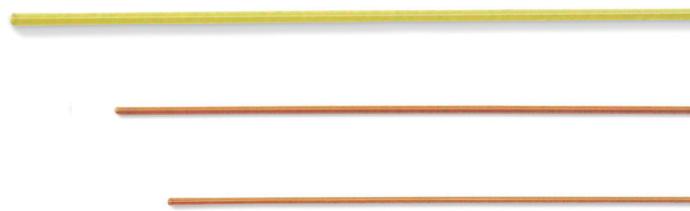
Super Clean™ Replacement Filters

Description	qty	Cat.No.
Moisture Filter	ea.	3001-18350
Oxygen Filter	ea.	3001-18351
Hydrocarbon Filter	ea.	3001-18352
Combi (Hydrocarbon/Moisture) Filter	ea.	3001-18353
Triple (Oxygen/Moisture/Hydrocarbon) Filter	ea.	3001-18354
Triple (Oxygen/Moisture/Hydrocarbon) Helium-Specific Filter	ea.	3001-18355

Super Clean™ Filters Base Plates

Description	qty	Cat.No.
Base Plate 1 Position - 1/8" Brass	ea.	3001-18300
Base Plate 2 Position - 1/8" Brass	ea.	3001-18301
Base Plate 3 Position - 1/8" Brass	ea.	3001-18303
Base Plate 4 Position - 1/8" Brass	ea.	3001-18304

Guard Column · Retention Gap Column (Fused silica capillary tube)



Purpose

Guard Column

Injecting samples with contamination or nonvolatile compounds directly to a column causes active spots and/or degeneration of the column. Even with on-column methods, splitless and split injection can not prevent a column from degeneration and damage.

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

Retention Gap Column

A retention gap column prevents GC analyses from broad peak band or multiple peaks of one compound.

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 Tube)

ID (mm)	OD (mm)	10 m	25 m	50 m
		Cat.No.	Cat.No.	Cat.No.
0.005	0.150	1010-35102	1010-35105	—
	0.375	1010-35142	1010-35145	—
0.010	0.150	1010-35202	1010-35205	—
	0.375	1010-35242	1010-35245	—
0.015	0.150	1010-35302	1010-35305	—
	0.375	1010-35342	1010-35345	—
0.020	0.150	1010-35402	1010-35405	—
	0.375	1010-35442	1010-35445	—
0.025	0.150	1010-35502	1010-35505	—
	0.375	1010-35542	1010-35545	—
0.030	0.150	1010-35602	1010-35605	—
	0.375	1010-35642	1010-35645	—
0.040	0.150	1010-35702	1010-35705	—
	0.375	1010-35742	1010-35745	—
0.050	0.150	1010-35802	1010-35805	—
	0.375	1010-35842	1010-35845	—
0.075	0.150	1010-35902	1010-35905	—
	0.375	1010-35942	1010-35945	—
0.100	0.200	1010-36012	1010-36015	1010-36017
	0.375	1010-36042	1010-36045	1010-36047
0.150	0.375	1010-36132	1010-36135	1010-36137
0.180	0.350	1010-36172	1010-36175	1010-36177
0.200	0.350	1010-36222	1010-36225	1010-36227
0.250	0.350	1010-36322	1010-36325	1010-36327
0.320	0.450	1010-36452	1010-36455	1010-36457
0.530	0.660	1010-36682	1010-36685	—

(Undeactivated Fused Silica Capillary Tube)

ID (mm)	OD (mm)	10 m	25 m	50 m
		Cat.No.	Cat.No.	Cat.No.
0.005	0.150	1010-31102	1010-31105	—
	0.375	1010-31142	1010-31145	—
0.010	0.150	1010-31202	1010-31205	—
	0.375	1010-31242	1010-31245	—
0.015	0.150	1010-31302	1010-31305	—
	0.375	1010-31342	1010-31345	—
0.020	0.150	1010-31402	1010-31405	—
	0.375	1010-31442	1010-31445	—
0.025	0.150	1010-31502	1010-31505	—
	0.375	1010-31542	1010-31545	—
0.030	0.150	1010-31602	1010-31605	—
	0.375	1010-31642	1010-31645	—
0.040	0.150	1010-31702	1010-31705	—
	0.375	1010-31742	1010-31745	—
0.050	0.150	1010-31802	1010-31805	—
	0.375	1010-31842	1010-31845	—
0.075	0.150	1010-31902	1010-31905	—
	0.375	1010-31942	1010-31945	—
0.100	0.200	1010-32012	1010-32015	1010-32017
	0.375	1010-32042	1010-32045	1010-32047
0.150	0.375	1010-32132	1010-32135	1010-32137
0.180	0.350	1010-32172	1010-32175	1010-32177
0.200	0.350	1010-32222	1010-32225	1010-32227
0.250	0.350	1010-32322	1010-32325	1010-32327
0.320	0.450	1010-32452	1010-32455	1010-32457
0.530	0.660	1010-32682	1010-32685	—

GC Accessories

Agilent Consumables

Inlet liners



To avoid scratches and contamination from air, liners for Agilent adapt blister package used for all the medical tablets. Due to the inertness treatment under 420°C, the liners avoid sample adsorption and dissolve, and are effective for highly sensitive analyses.

Type	Shape	Details	Deactivated	Unit (pcs)	Agilent P/N	Cat.No.
Split		Single taper Quartz wool (fixed) Focus liner	Yes	5	5183-4712	3001-41237
				25	5183-4713	3001-41257
		Straight Quartz wool	Yes	5	5183-4691	3001-41229
				25	5183-4692	3001-41233
Splitless		Single taper Quartz wool	Yes	5	5183-4693	3001-41260
				25	5183-4694	3001-41261
		Single taper	Yes	5	5183-4695	3001-41248
				25	5183-4696	3001-41258
		Double taper	Yes	5	5183-4705	3001-41262
				25	5183-4706	3001-41263
Focus liner		Quartz wool (fixed)	Yes	5	210-4004-5	3001-41235
				25	—	3001-41236

O-ring for liner

Description	Material	ID (mm) x Thickness (mm)	Unit (pcs)	Cat.No.
O-ring for liner	Viton	4.8 x 1.9	20	3007-11205

Ferrules



The graphite vespel ferrule is suitable for GC/MS with mechanical strength and the graphite ferrule for general GC. Both types have excellent stability when the temperature increases and chemical resistance. Blister package is adapted for graphite vespel ferrule.

Description	Model	Purpose	Column	Unit(pcs)	Agilent P/N	Cat.No.
15% Graphite/85% Vespel Ferrule (Short ferrule)	GVS-0.4	GC Injector • Detector	0.10~0.25 mm	10	5181-3323	3007-41140
	GVS-0.5		0.32 mm	10	5062-3514	3007-41150
	GVS-0.8		0.53 mm	10	5062-3512	3007-41180
15% Graphite/85% Vespel Ferrule (Long ferrule)	GVL-0.4	MS Interface connection	0.10~0.25 mm	10	5062-3508	3007-31144
	GVL-0.5		0.32 mm	10	5062-3506	3007-31145
	GVL-0.8		0.53 mm	10	5062-3538	3007-31148
Graphite ferrule (Short ferrule)	GF-0.5	GC Injector • Detector	0.10~0.32 mm	10	5080-8853	3007-31305
	GF-0.8		0.53 mm	10	500-2118	3007-31308

Septa

There are ultra low bleed septum, LB·S types, that takes up to 350°C at the injection port and general purpose gray septum.



Description	Size (mm)	Purpose	Agilent P/N	Material	Unit (pcs)	Cat.No.
LB·S Septa	11 (7/16")	High temperature/ sensitivity	—	Bronze silicon	25	3007-41135
Gray Septa		General purpose	5080-8896	Grey silicon	24	3007-41523

Autosampler syringes

● For Agilent 7673, 7683, 7693A, 6850ALS



[SGE]

Needle type	Volume	Model	Needle length (mm)	Needle gauge	Needle OD (mm)	SGE P/N	Agilent P/N	Cat.No.
Fixed	5 µL	5F-HP-0.47	42	26	0.47	001800	9301-0891	4065-47302
		5F-HP-0.63	42	23	0.63	001810	9301-0892	4065-47303
		5F-HP-0.63/0.47	42	23/26	0.63/0.47	001821	5181-1273	4065-47304
	10 µL	10F-HP-0.47	42	26	0.47	002800	9301-0714	4065-47408
		10F-HP-0.63	42	23	0.63	002810	9301-0713	4065-47409
		10F-HP-0.63/0.47	42	23/26	0.63/0.47	002821	5181-1267	4065-47412
Removable	0.5 µL	0.5BR-HP-0.47	42	26	0.47	000400	—	4065-47004
		0.5BR-HP-0.63	42	23	0.63	000410	—	4065-47005
	10 µL	10R-HP-0.47	42	26	0.47	002805	—	4065-47410
		10R-HP-0.63	42	23	0.63	002815	—	4065-47411

[Hamilton]

Needle type	Volume	Model	Needle length (mm)	Needle gauge	Hamilton P/N	Agilent P/N	Minimum scale	Cat.No.
Fixed	10 µL	701ASN 26s	43	26s	80388	9301-0714	0.1 µL	4015-11711
		701ASN 23s	43	23s	80387	9301-0713	0.1 µL	4015-11701
		701ASN 23s/26s	43	23s/26s	80393	5181-1267	0.1 µL	4015-11712
		701ASN 23s 6pcs	43	23s	80390	9301-0725	0.1 µL	4015-11761
		701ASN 23s/26s 6pcs	43	23s/26s	80391	5181-3360	0.1 µL	4015-11763

GC Accessories

Shimadzu Consumables

Inlet liners



Some of these liners are treated under 420°C for inertness treatment and in the blister package. It is effective for the analyses of adsorptive samples.

Type	Shape	GC model	Deactivated	Unit(pcs)	Shimadzu P/N	Cat.No.
Split		GC-2010/GC-2014	No	1	221-41444-01	3001-16138*
		GC-17A	No	1	221-41444	3001-16320*
		GC-14A/14B/GC-2014	No	5	221-41444-84	3001-16312*
Splitless		GC-2010/GC-2014	No	1	221-48335-01	3001-16139*
				5	—	3001-16140*
				25	—	3001-16141*
		GC-17A	No	1	221-41544	3001-16321*
			No	5	221-41544-84	3001-16315*
Direct		GC-14A/14B/GC-2014	No	1	221-32544	3001-16121*
		GC-17A	No	1	221-41599	3001-16319*
Focus Liner		GC-9A/12A/15A/16A (Attachment)	No	1	221-38107	3001-16129*
				1	—	3001-16323
		GC-14A/14B Quartz Wool fixed	Yes	5	—	3001-16322
			Yes	5	—	3001-16324
		GC-2010 Quartz Wool fixed	Yes	25	—	3001-16326

*Not in the blister package

O-ring for liner

Description	Material	ID (mm) × Thickness (mm)	Unit (pcs)	Cat.No.
O-ring for liner	Viton	3.8 × 1.9	20	3007-11204

Ferrules



The graphite vespel ferrule is suitable for GC/MS with mechanical strength and the graphite ferrule for general GC. Both types have excellent stability when the temperature increases and chemical resistance. Blister package is adapted for graphite vespel ferrule.

Description	Model	Purpose	Column ID	Unit (pcs)	Cat.No.
15 % Graphite/85 % Vespel Ferrule	GVL-0.4	GCMS_QP2010 Injector·MS Interface QP5000/5050 Wide bore MS Interface	0.10~0.25 mm	10	3007-31144
	GVL-0.5		0.32 mm	10	3007-31145
	GVL-0.8		0.53 mm	10	3007-31148
Graphite Ferrule	G-0.5	GC14A,GC17A,GC2010,GC2014 Injector·Detector	0.10~0.32 mm	10	3007-14005*
	G-0.8		0.53 mm	10	3007-14008*

*Not in the blister package

Septa



Description	Shape	Purpose	Material	Unit (pcs)	Cat.No.
LB · S Septa	Cap type	High temperature/sensitivity	Bronze silicon	25	3007-16105
Septa for high temperature		Mid-High temperature	Bronze silicon	25	3007-16103
Septa for heat resistance		Mid-High temperature	Pink silicon	25	3007-16102
Standard Septa		General analyses	Yellow silicon	20	3007-16101

GC Capillary Columns

Special Columns-Other Columns

GC Accessories

Applications

Autosampler syringes(SGE)

●For AOC14,AOC17,AOC20



Needle type	Volume	Model	Needle length(mm)	Needle gauge	Needle OD (mm)	SGE P/N	Cat.No.
Fixed	5 µL	5F-S-0.47	42	26	0.47	001987	4065-47300
		5F-S-0.63	42	23	0.63	001988	4065-47301
Removable	0.5 µL	0.5BR-S-0.47	42	26	0.47	000440	4065-47002
		0.5BR-S-0.63	42	23	0.63	000445	4065-47003
	10 µL	10R-S-0.47	42	26	0.47	002897	4065-47406
		10R-S-0.63	42	23	0.63	002898	4065-47407

GC Accessories

Thermo Scientific Consumables

Inlet liners

For Trace GC, Focus GC



To avoid scratches and contamination from air, liners for Thermo Scientific adapt blister package used for all the medical tablets. Due to the inertness treatment under 420 °C, the liners avoid sample adsorption and dissolve, and are effective for highly sensitive analyses.

Type	Shape	Size (mm)	Deactivated	Unit (pcs)	Thermo Scientific P/N	Cat.No.
Splitless		3×8×105	Yes	5	45350032	3001-41102
		5×8×105	Yes	5	45350033	3001-41104

Ferrules



The graphite vespel ferrule is mechanically strong when the temperature is increasing. Blister package is adapted for all types.

Description	Model	Purpose	Column ID	Unit (pcs)	Cat.No.
15 %Graphite/85 % Vespel Ferrule	GVL-0.4	MS Interface	0.10~0.25 mm	10	3007-31144
	GVL-0.5		0.32 mm	10	3007-31145
	GVL-0.8		0.53 mm	10	3007-31148
15 %Graphite /85 % Vespel Ferrule	Trace/Focus 0.4	Trace/Focus GC Injector-Detector	0.10~0.25 mm	10	3007-41154
	Trace/Focus 0.5		0.32 mm	10	3007-41155
	Trace/Focus 0.8		0.53 mm	10	3007-41158
Brass nut for injector port	—	Trace GC Injector	—	2	3001-24371

Septa

These are ultra low bleed septum that takes up to 350°C at the injection port.



Description	Size (mm)	Purpose	Material	Unit (pcs)	Cat.No.
LB · S Septa	17	High temperature/sensitivity	Bronze silicon	25	3007-41136

GC Capillary Columns

Special Columns-Other Columns

GC Accessories

Applications

Autosampler syringe (SGE)



For TriPlus, AS3000, AS2000, AS200/800

Needle type	Volume	Model	Needle length (mm)	Needle gauge	Needle OD (mm)	SGE P/N	Cat.No.
Fixed	10 µL	10F-C/F-5/0.47C	50	26	0.47	002980	4065-47420
		10F-C/F-5/0.63C	50	23	0.63	002981	4065-47421

For TriPlus, AS2000

Needle type	Volume	Model	Needle length (mm)	Needle gauge	Needle OD (mm)	SGE P/N	Cat.No.
Fixed	10 µL	10F-C/F-8/0.47C	80	26	0.47	002992	4065-47422
		10F-C/F-8/0.63C	80	23	0.63	002989	4065-47423

GC Accessories

Varian Consumables

Inlet liners



To avoid scratches and contamination from air, liners for Varian adapt blister package used for all the medical tablets. Due to the inertness treatment under 420 °C, the liners avoid sample adsorption and dissolve, and are effective for highly sensitive analyses.

Type	Shape	Details	Deactivated	Unit (pcs)	Varian P/N	Cat.No.
Split/ Splitless		Single taper with Quartz wool (fixed) Focus liner	Yes	5	SG092003	3001-41237
		Quartz wool (fixed) Focus liner		25	SG092011	3001-41257
		Straight with Quartz wool	Yes	5	SG092002	3001-41235
		Straight with Quartz wool		25	SG092219	3001-41236
Split		Straight with Quartz wool	Yes	5	392611937	3001-41229
		Straight with Quartz wool		25	—	3001-41233
Splitless		Single taper with Quartz wool	Yes	5	392611928	3001-41260
		Single taper with Quartz wool		25	—	3001-41261
		Single taper	Yes	5	392611927	3001-41248
		Double taper		25	—	3001-41258
		Double taper	Yes	5	SG092018	3001-41262
				25	SG092230	3001-41263

O-ring for liner

Description	Material	ID (mm) × Thickness (mm)	Unit (pcs)	Cat.No.
O-ring for liner	Viton	4.8 × 1.9	20	3007-11205

Ferrules



Description	Model	Purpose	Column ID	Unit (pcs)	Cat.No.
15 % Graphite /85 % Vespel Ferrule	GVL-0.4	GC Injector-Detector MS Interface	0.10~0.25 mm	10	3007-31144
	GVL-0.5		0.32 mm	10	3007-31145
	GVL-0.8		0.53 mm	10	3007-31148

Autosampler syringe (SGE)

- For Varian 8035, 8100, 8200, CP8400, CP8410



Needle type	Volume	Model	Needle length (mm)	Needle gauge	Needle OD (mm)	Needle Point	SGE P/N	Cat.No.
Fixed	10 µL	10F-VA8400-5/0.47	50	26	0.47	Bevel	002950	4065-47424
		10F-C/F-5/0.63	50	23	0.63	Corn	002981	4065-47421

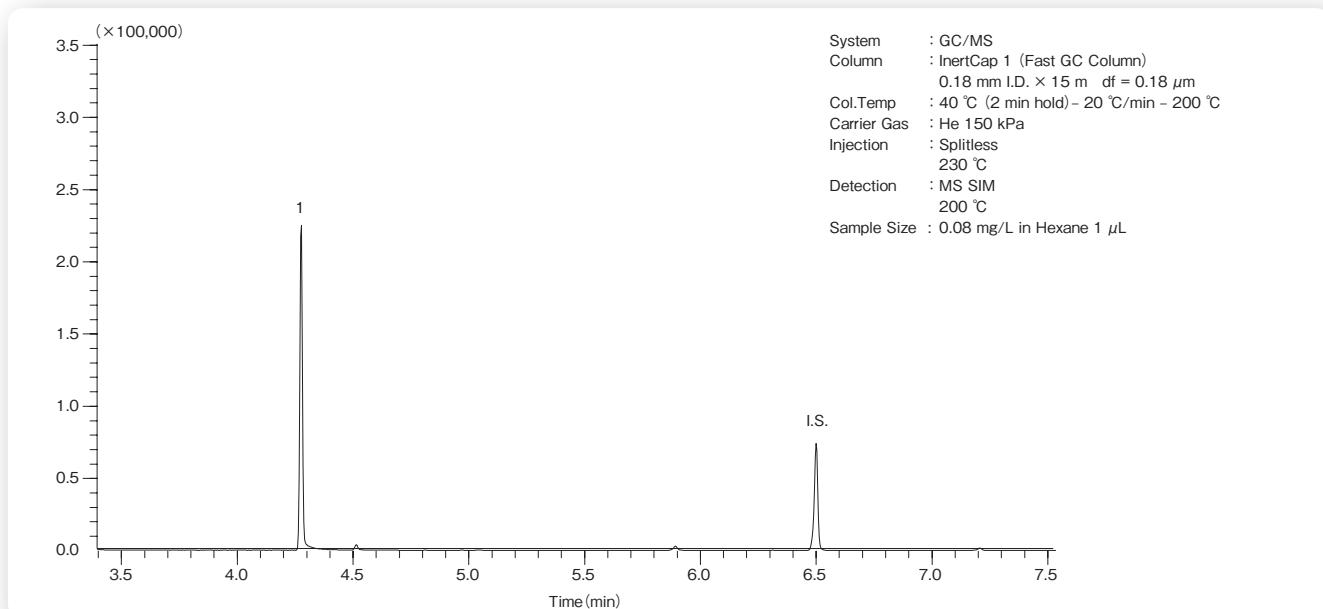
A p p l i c a t i o n s

Applications

Contents

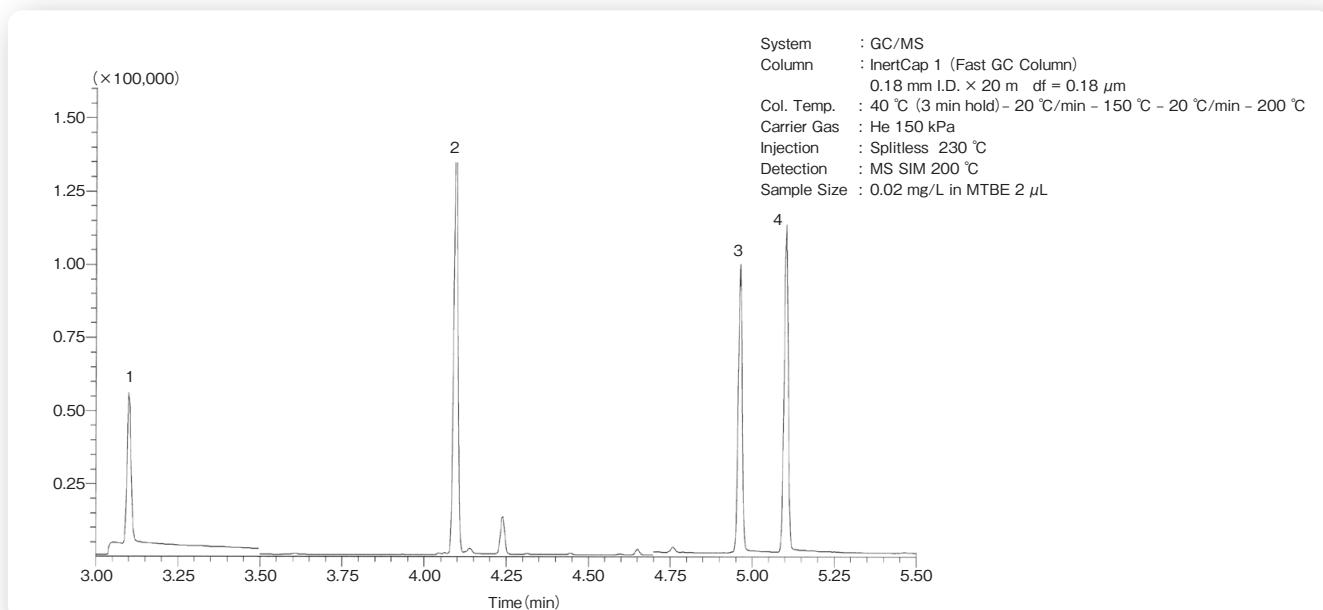
Chromatogram	GC	Column	Page
Formaldehyde in water (Fast GC)	GC/MS	InertCap 1 (Fast GC Column)	51
Halogenoacetic acids in water (Fast GC)	GC/MS	InertCap 1 (Fast GC Column)	51
Phenols in water (Fast GC)	GC/MS	InertCap 1 (Fast GC Column)	52
VOCs in water	GC/MS P&T (AQUA PT 5000J)	AQUATIC	52
Pesticides	GC/MS	InertCap Pesticides	53
VOCs	GC/MS	AQUATIC	54
Indoor air	GC/MS Thermal Desorption (T-Dex II)	InertCap 1MS	54
Outgas released from LSI materials	GC/MS Thermal Desorption (T-Dex II)	InertCap 1MS	55
Phthalate esters	GC/MS	InertCap 1	55
Residual solvents in pharmaceuticals Class3	GC/FID	InertCap 624	56
Residual solvents in pharmaceuticals Class3	GC/FID	InertCap Pure-WAX	56
Fragrances	GC/FID	InertCap Pure-WAX	57
Lavender (Optical isomers)	GC/FID	InertCap CHIRAMIX	57
Indole/Skatole	GC/FID	InertCap 5	58
FAME	GC/FID	InertCap Pure-WAX	58
VOC & Amines	GC/FID	InertCap for Amines	59
Magnesium Stearate by Japanese Pharmacopeia	GC/FID	InertCap WAX-HT	60
Hydrocarbons C2-C4	GC/FID	InertCap 1	60
Diesel	GC/MS	InertCap 1	61
Kerosene	GC/MS	InertCap 1	61
Organic solvents 46 compounds	GC/FID	InertCap 1	62
Organic solvents 46 compounds	GC/FID	InertCap 5	62
Organic solvents 46 compounds	GC/FID	InertCap 1701	63
Organic solvents 46 compounds	GC/FID	InertCap 17	63
Organic solvents 46 compounds	GC/FID	InertCap WAX	64
Organic solvents 58 compounds	GC/FID	InertCap 5MS/Sil	64
Organic solvents 58 compounds	GC/FID	InertCap 25	65
Organic solvents 58 compounds	GC/FID	InertCap WAX	65

Formaldehyde in water (Fast GC)



1. Formaldehyde
(Deriv. by PFBOA)
I.S. 1-Chlorodecane

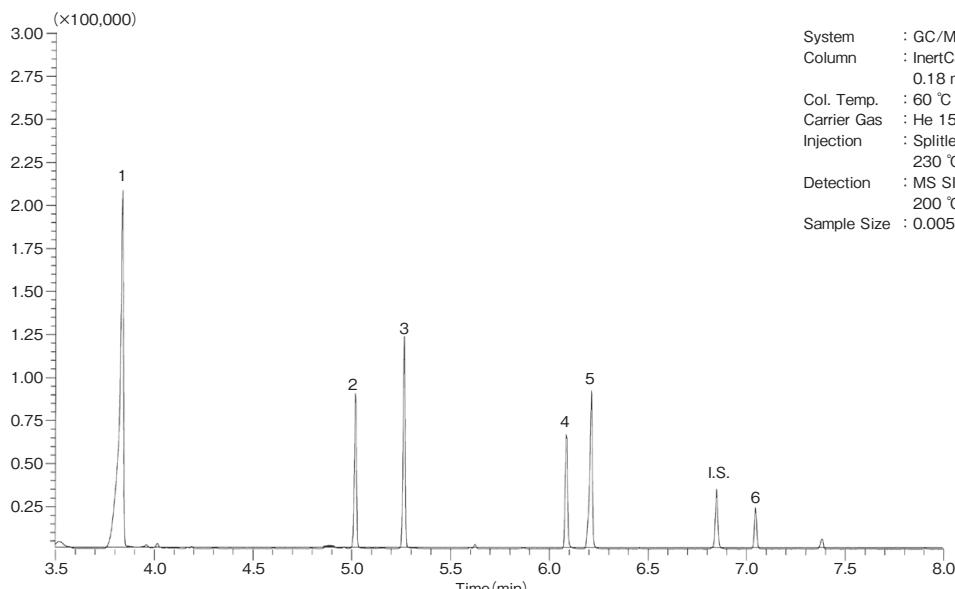
Halogenoacetic acids in water (Fast GC)



1. Chloroacetic acid
2. Dichloroacetic acid
3. 1,2,3-Trichloropropane
4. Trichloroacetic acid
(Methylester Deriv. by Diazomethane)

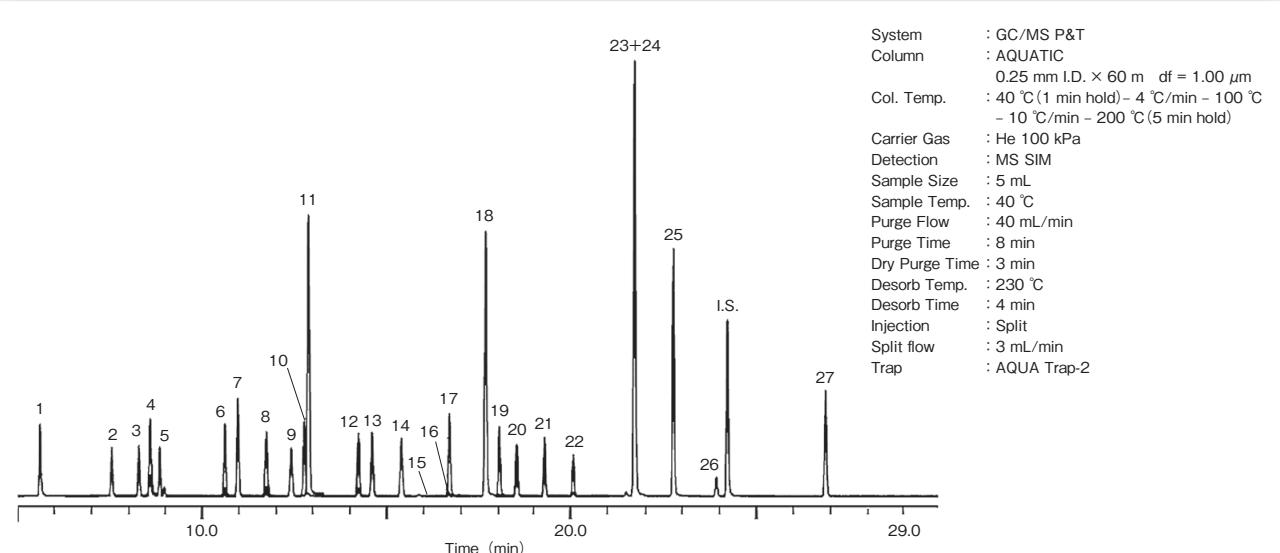
Applications

Phenols in water(Fast GC)



1. Phenol
2. 2-Chlorophenol
3. 4-Chlorophenol
4. 2,6-Dichlophenol
5. 2,4-Dichlorophenol
6. 2,4,6-Trichlorophenol
(TMS Deriv. by BSTFA)
I.S. : Acenaphtene

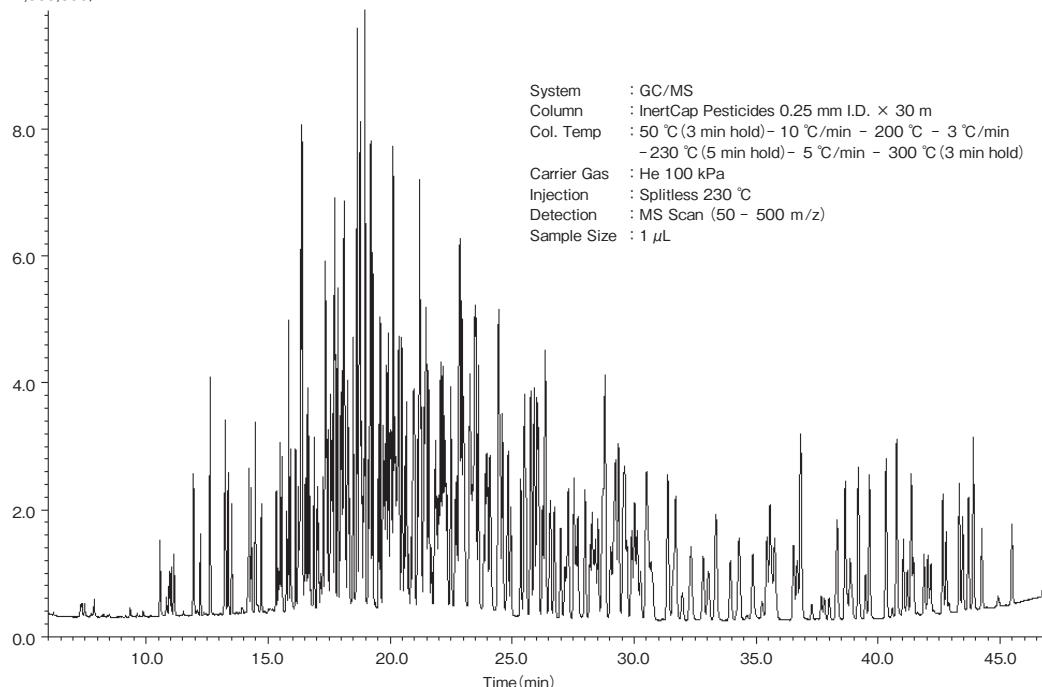
VOCs in water



1. Vinyl chloride
2. 1,1-Dichloroethene
3. Dichloromethane
4. MTBE
5. trans-1,2-Dichloroethene
6. cis-1,2-Dichloroethene
7. Chloroform
8. 1,1,1-Trichloroethane
9. Carbon Tetrachloride
10. 1,2-Dichloroethane
11. Benzene
12. Trichloroethene
13. 1,2-Dichloropropane
14. Bromodichloromethane
15. 1,4-Dioxane
16. Epichlorohydrin
17. cis-1,3-Dichloropropene
18. Toluene
19. trans-1,3-Dichloropropene
20. 1,1,2-Trichloroethane
21. Tetrachloroethene
22. Dibromochloromethane
23. m-Xylene
24. p-Xylene
25. o-Xylene
26. Bromoform
I.S. p-Bromofluorobenzene
27. p-Dichlorobenzene

Pesticides

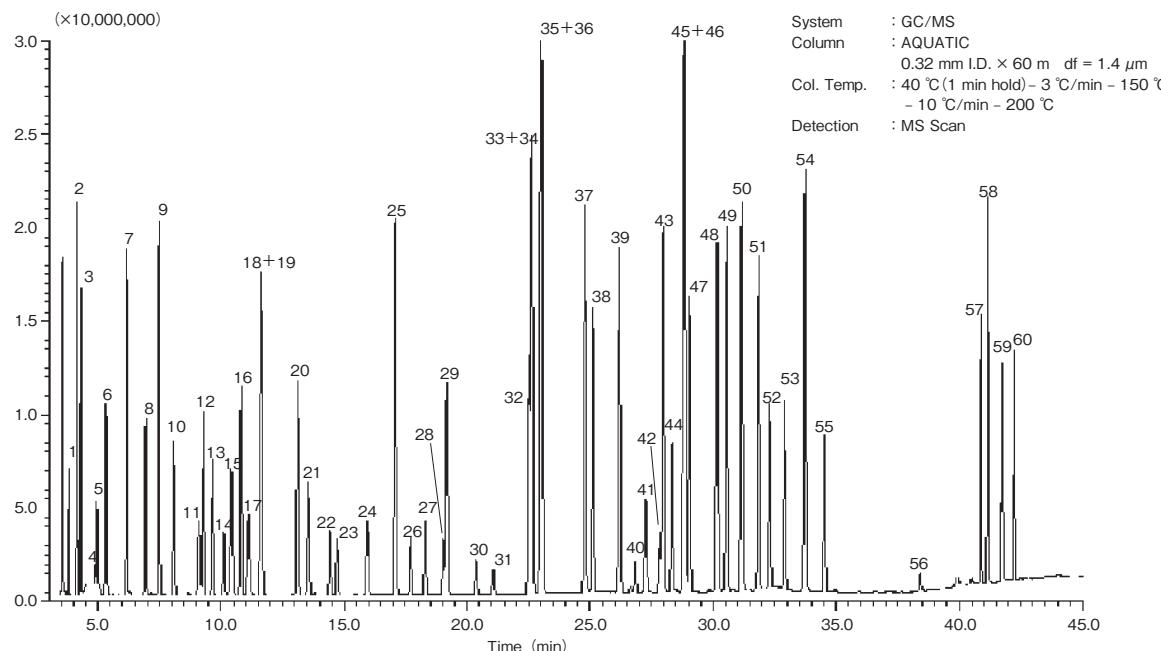
(×1,000,000)



Compound	R.T.	Compound	R.T.	Compound	R.T.	Compound	R.T.	Compound	R.T.	Compound	R.T.
DCIP	7:20	Cyanophos	17:37	Quinoclamine(ACN)	19:55	Butachlor	22:14	Edifenphos	26:01	Furanmetpyr metabolite	31:42
Clofentezine	9:20	Fonofos	17:39	Metorachlor	19:55	alpha-Endosulfan	22:17	Cyanofenphos	26:02	Amitraz	31:59
Dichlorvos	10:34	Propyzamide	17:43	Chlorpyriphos	20:00	Fenothiocarb	22:20	Quinofenfen	26:05	Cyhalothrin-2	32:17
Nereitoxin oxalate	10:57	Proquilon	17:43	Thiobencarb	20:02	Ditalimfos	22:29	Propiconazole1	26:05	Fenarimol	32:20
Alidochlor	11:09	Diazinon	17:45	Chlorthal-dimethyl	20:07	Butamifos	22:30	Trifloxystrobin	26:15	Pyrazophos	32:50
Dichlobenil	11:57	Phosphamidon E	17:47	Fenthion	20:08	Napropamide	22:40	Propiconazole2	26:20	Azinphos-ethyl	33:03
EPTC	12:14	Pyrimethanil	17:51	Diethofencarb	20:08	Fenamiphos	22:44	Pyriminobac methyl E	26:22	Dialitos	33:21
Biphenyl	12:37	Chlorthalonil	17:52	fenpropimorph	20:11	Chlorfenson	22:49	Lenacil	26:22	Acrinathrin	33:22
Butylate	13:14	Disulfoton	17:57	Parathion	20:14	Hexaconazole	22:49	Chloridazon	26:32	Pyraclofos	33:57
Mevinphos	13:15	Prohydrojasmon	17:59	Cyanazin	20:16	Flutolanil	22:52	Pyräflufen-ethyl	26:34	Fenoxyprop-ethyl	34:17
Chlormefos	13:22	Isazophos	18:01	Triadimenon	20:19	Prothifos	22:52	Tenylchlor	26:44	Spirodiclofen	34:19
Etridiazole	13:31	Tefuthrin	18:04	Tetraconazole	20:21	Metominostrobin-E	22:56	Tebuconazole	26:59	Biteranol-1	34:52
Thiocyclam	14:10	Etrimsos	18:07	Isocarbophos	20:22	Prethilachlor	22:56	Propargite-1	27:10	Permethrin-1	35:15
Methacryfos	14:13	Triallat	18:07	Fthalide	20:29	Isoprotiolan	23:00	Propargite-2	27:14	Biteranol-2	35:17
Crimidine	14:19	δ-BHC	18:07	Nitrothal isopropyl	20:29	Fludioxonil	23:01	Captafol	27:17	Fluquiconazole	35:27
OPP	14:29	Terbacil	18:08	Carbetamide	20:31	Profenopfos	23:03	Diflufenican	27:19	Pyridaben	35:34
Molinate	14:44	Phenothiol	18:10	Bromopros metyl	20:36	Uniconazole-P	23:14	Piperonyl butoxide	27:32	Oxaproconazole	35:40
Tecnazene	15:20	Tebupirimfos	18:15	Diphenamid	20:40	Oxadizon	23:16	Nitralin	27:37	Permethrin-2	35:46
Ometoatoe	15:25	Iprobenifos	18:18	Fosthiazate 1	20:41	Tribufos	23:18	Bioresmethrin	27:42	Etobenzand	36:32
Etobenzanid metabolite	15:30	Oxabenzilin	18:20	Fosthiazate 2	20:46	Thifluzamide	23:21	Pyribucarb	27:59	Cafenstrole	36:41
Xylifcarb	15:30	MCPB	18:29	Thiamethoxam	20:52	Myclobutanil	23:24	Chlomethoxynil	28:12	Butafenacil	36:49
Propachlor	15:34	MCPB ethyl	18:29	Pendimethalin	20:56	Buprofezin	23:27	Pyridafenit	28:17	Fenbuconazole	36:51
Demeton-S-methyl	15:46	Phosphamidon Z	18:38	Chlortenphos-E	20:58	Flusilazole	23:28	Bromuconazole-1	28:21	Cyfluthrin-1	37:17
Diphenylamine	15:50	Dichlofenthion	18:39	Cyprodinil	21:00	Oxyfluorfen	23:30	Iprodione	28:25	Cyfluthrin-2	37:41
Ethoprophos	15:55	Dimethenamid	18:39	Penconazole	21:08	Diclobutrazole	23:31	Phosmet	28:31	Cyfluthrin-3	37:48
Ethalfuralin	16:08	Benfiresates	18:39	Fipronil	21:12	Bupirimate	23:31	Tetramethrin-1	28:33	Cyfluthrin-4	37:59
Naled	16:09	Terbucarb	18:44	Dimethanetryn	21:12	Azaconazole	23:37	EPN	28:41	Cypermethrin-1	38:16
Chlorpropham	16:14	Bromobutide	18:46	Isofenphos	21:13	Bromopropylate	28:44	Bromopropylate	28:44	Halphenprox	38:19
Phenmedipham	16:17	Acetochlor	18:46	Tolyflufen	21:13	Chlorfenapyr	23:51	Bifenithrin	28:48	Cypermethrin-2	38:39
Dichlofuanid metabolite	16:17	Chloryphosphos methyl	18:47	Cyphenox-1	21:15	Cyflufenamid	23:55	Iprodione	28:49	Cyhalofop-ethyl	38:39
Trifluralin	16:20	Propanil	18:47	Oxapocanazole formyl	21:17	Cyproconazole1	23:55	Piperophos	28:49	Oxaproconazole	35:40
Dicrotophos	16:20	Oxapocanazole	18:50	Mecarbam	21:23	Tetramethrin-2	29:03	Permethrin-3	38:45		
Salithion	16:21	Metrizbutin	18:51	Ethyloclate	21:24	Cyproconazole2	23:59	Flucythrinate-1	38:51		
Flusilazole metabolite	16:21	Simeconazole	18:58	Allethrin-1	21:25	Nitrofene	24:05	Fluxazalone	29:12	Flucythrinate-2	38:51
Benfurinal	16:23	Alachlor	18:58	Phenthoate	21:27	Etoxazole	29:15	Flucythrinate-3	38:51		
2,6-Dichlorobenzamide	16:23	Tolclofos methyl	18:58	Alltechrin-2	21:27	Fenoxyanil	24:06	Pyrethrin-4	38:56		
Sulfotep	16:24	Parathion methyl	18:58	Quinalphos	21:29	beta-Endosulfan	24:26	Ethofenprox	39:12		
Cadusafos	16:32	Simethrin	19:07	Diclocymet-1	21:29	Bromuconazole	29:22	Silafluofen	39:39		
Phorate	16:37	Metalaxylyl	19:10	Captan	21:29	Bromuconazole-2	29:33	Pyrimidifen	40:20		
α-BHC	16:41	Fenchlorphos	19:12	Dimepiperate	21:34	Chloropyran	29:33	Fluoximazin	40:46		
Thiometon	16:53	Vinclozolin	19:13	Procymidon	21:35	Fensulfothion	24:36	Esfenvalerate	40:46		
Dimethoate	16:53	Amethrin	19:13	Triadimenol-1	21:36	Leptophos	30:29	Fluvalinate-1	41:12		
Dichloran	17:01	Cinnmethylin	19:13	Triadimenol-1	21:36	Malaxyl	25:45	Ethofenprox	41:21		
Desmedipharm	17:09	Prometryn	19:17	Metophrene	21:49	Chlorpyriphos	24:57	Fluvalinate-2	41:27		
Simazine	17:16	Dithiopyr	19:18	Fermzone E, Z	21:51	Fluacrypyrim	25:21	Difenoconazole-1	41:53		
Quintozene	17:20	Pirimiphos methyl	19:32	Triadimenol-2	21:52	Suprophos	25:30	Difenoconazole-2	42:02		
Atrazin	17:21	Fenitrothion	19:36	Methidathion	21:55	Mepronil	25:31	Phosalone	30:31		
Swept	17:21	Terbutryn	19:36	Metidathion	21:56	Pyrazoxyfen	30:31	Indoxacarb MP	42:39		
β-BHC	17:23	Dimethylvinphos-E	19:42	Diclocymet-2	22:02	Phenothrin	30:36	Deltamethrin	42:47		
Dimethipin	17:24	Dimethylvinphos-Z	19:42	Propaphos	22:04	Phenothrin	30:41	Azoxystrobin	43:20		
γ-BHC	17:27	Dichlofuanid	19:44	Pyrifenoxy-2	22:04	CNP	25:47	Dimethomorph-1	43:28		
Dioxathion	17:28	Esporcarb	19:47	Tetraclorvinphos	22:08	Carbofenthion	25:54	Tolfenpyrade	43:54		
Tolylfluanid metabolite	17:32	Malathion	19:51	Trichlamide	22:10	Formothion	25:54	Mefenacet	31:23		
Terbufos	17:34	Bromacil	19:51	Paclobutrazole	22:10	Cafentrazole	25:55	Cyhalothrin-1	31:36		
											Dimethomorph-2
											44:15
											Fluthiacet-methyl
											45:29

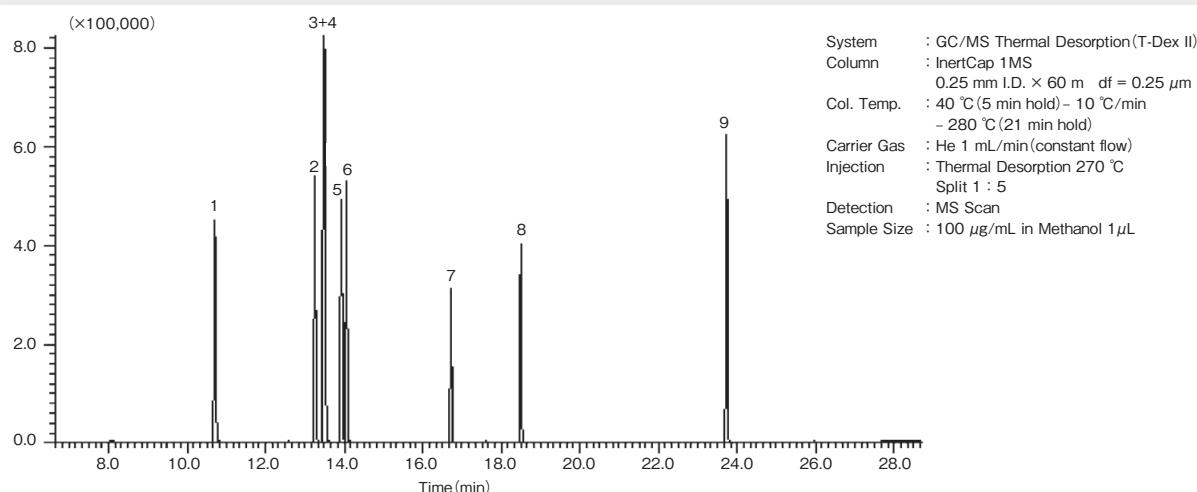
Applications

VOCs



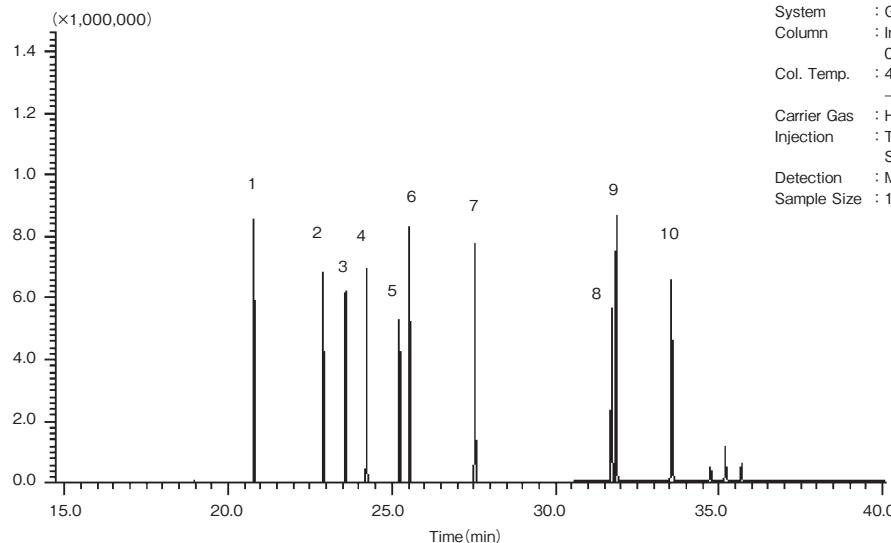
- | | | | | |
|-----------------------------|--------------------------------|----------------------------------|-------------------------------|---------------------------------|
| 1. Dichlorodifluoromethane | 13. Chloroform | 25. Toluene | 37. o-Xylene | 49. 1,2,4-Trimethylbenzene |
| 2. Chloromethane | 14. Bromochloromethane | 26. trans-1,3-Dichloro-1-propene | 38. Styrene | 50. sec-Butylbenzene |
| 3. Vinylchloride | 15. 1,1,1-Trichloroethane | 27. 1,1,2-Trichloroethane | 39. i-Propylbenzene | 51. 4-Isopropyltoluene |
| 4. Bromomethane | 16. 1,1-Dichloropropene | 28. 1,3-Dichloropropane | 40. Bromoform | 52. 1,3-Dichlorobenzene |
| 5. Chloroethane | 17. Carbon Tetrachloride | 29. Tetrachloroethene | 41. 1,1,2,2-Tetrachloroethane | 53. 1,4-Dichlorobenzene |
| 6. Trichlorofluoromethane | 18. 1,2-Dichloroethane | 30. Dibromochloromethane | 42. 1,2,3-Trichloropropane | 54. n-Butylbenzene |
| 7. 1,1-Dichloroethene | 19. Benzene | 31. 1,2-Dibromoethane | 43. n-Propylbenzene | 55. 1,2-Dichlorobenzene |
| 8. Dichloromethane | 20. Trichloroethene | 32. Chlorobenzene | 44. Bromobenzene | 56. 1,2-Dibromo-3-chloropropane |
| 9. trans-1,2-Dichloroethene | 21. 1,2-Dichloropropane | 33. 1,1,1,2-Tetrachloroethane | 45. 2-Chlorotoluene | 57. 1,2,4-Trichlorobenzene |
| 10. 1,1-Dichloroethane | 22. Bromodichloromethane | 34. Ethylbenzene | 46. 1,3,5-Trimethylbenzene | 58. Hexachloro-1,3-butadiene |
| 11. 2,2-Dichloropropane | 23. Dibromomethane | 35. m-Xylene | 47. 4-Chlorotoluene | 59. Naphthalene |
| 12. cis-1,2-Dichloroethene | 24. cis-1,3-Dichloro-1-propene | 36. p-Xylene | 48. tert-Butylbenzene | 60. 1,2,3-Trichlorobenzene |

Indoor air



- | | | | | |
|-----------------|-------------|-------------|----------------------|----------------|
| 1. Toluene | 3. m-Xylene | 5. Styrene | 7. p-Dichlorobenzene | 9. Tetradecane |
| 2. Ethylbenzene | 4. p-Xylene | 6. o-Xylene | 8. Nonanal | |

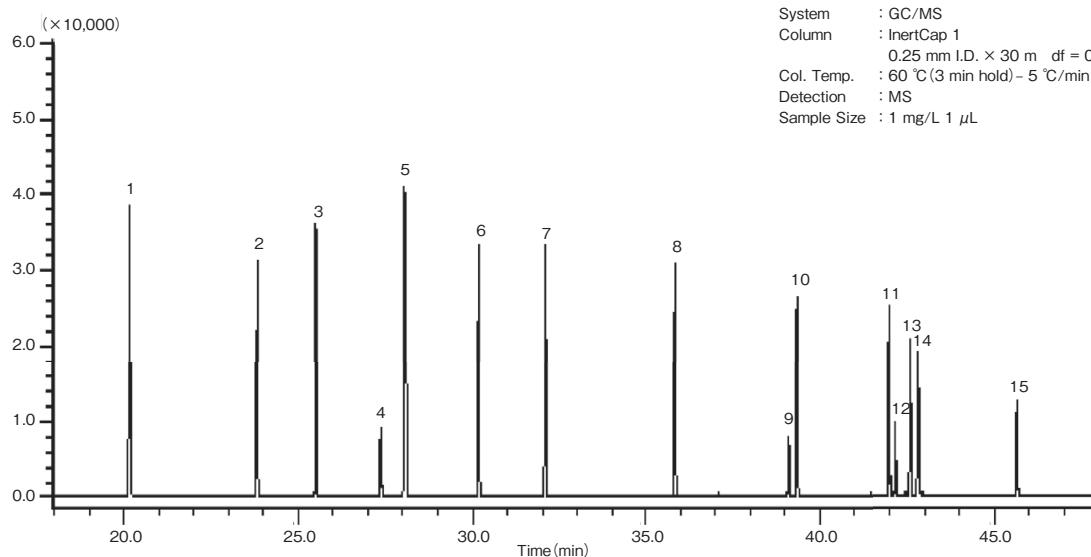
Outgas released from LSI materials



System : GC/MS Thermal Desorption(T-Dex II)
 Column : InertCap 1MS
 0.25 mm I.D. × 60 m df = 0.25 μ m
 Col. Temp. : 40 °C(5 min hold) – 10 °C/min
 – 280 °C(21 min hold)
 Carrier Gas : He 1mL/min (constant flow)
 Injection : Thermal Desorption 270 °C
 Split 1 : 5
 Detection : MS Scan
 Sample Size : 100 μ g/mL in Acetone 1 μ L

- | | |
|--|-------------------------------------|
| 1. D6 (Hexamethylcyclotrisiloxane) | 6. DBA : Di-n-butyl adipate |
| 2. BHT : Butylated hydroxytoluene | 7. DBP : Di-n-butyl phthalate |
| 3. DEP : Diethyl phthalate | 8. TPP : Triphenyl phosphate |
| 4. TBP : Tributyl phosphate | 9. DOA : Di(2-ethylhexyl)adipate |
| 5. TCEP : Tris(2-chloroethyl)phosphate | 10. DOP : Di(2-ethylhexyl)phthalate |

Phthalate esters

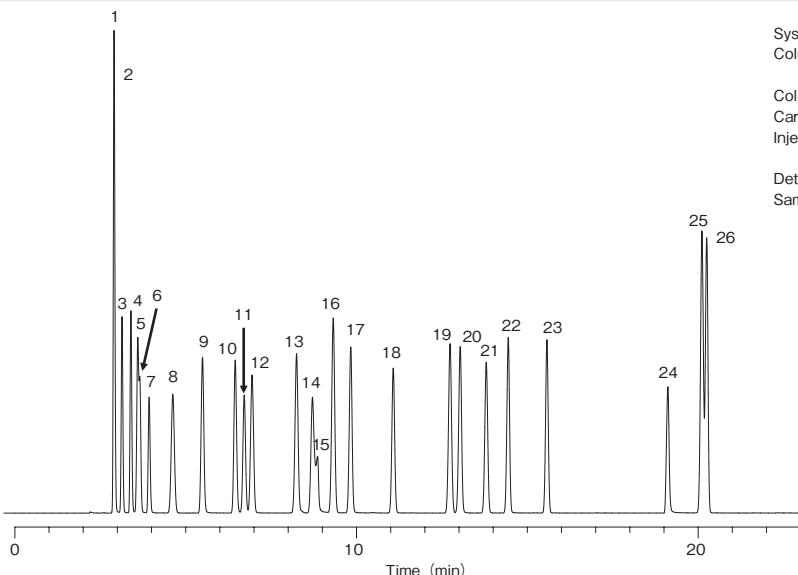


System : GC/MS
 Column : InertCap 1
 0.25 mm I.D. × 30 m df = 0.25 μ m
 Col. Temp. : 60 °C(3 min hold) – 5 °C/min – 280 °C(3 min hold)
 Detection : MS
 Sample Size : 1 mg/L 1 μ L

- | | | |
|---------------------------|--------------------------|-------------------------------|
| 1. Dimethyl phthalate | 6. Di-isobutyl phthalate | 11. Dicyclohexyl phthalate |
| 2. Diethyl phthalate | 7. Di-n-butyl phthalate | 12. Diphenyl phthalate |
| 3. Di-isopropyl phthalate | 8. Dipentyl phthalate | 13. Diheptyl phthalate |
| 4. Diallyl phthalate | 9. Butylbenzyl phthalate | 14. Di-2-ethylhexyl phthalate |
| 5. Di-n-propyl phthalate | 10. Dihexyl phthalate | 15. Dioctyl phthalate |

Applications

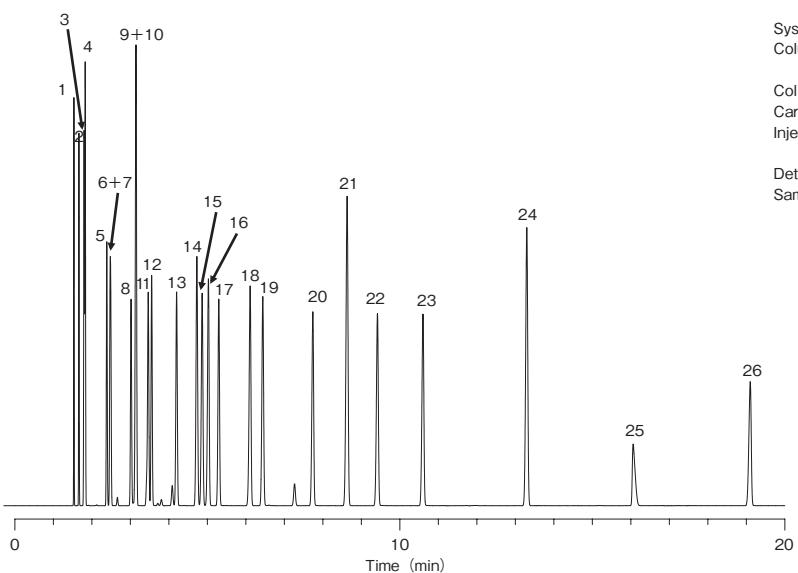
Residual solvents in pharmaceuticals Class3



System : GC/FID
Column : InertCap 624
0.53 mm I.D. × 30 m df = 3.00 μ m
Col. Temp. : 40 °C (5min hold) – 5 °C/min – 130 °C
Carrier Gas : He 20 kPa
Injection : Split flow 200 mL/min
240 °C
Detection : FID 240 °C
Sample Size : Mixed evenly 0.4 μ L

- | | | | | |
|------------------|-------------------------|----------------------|------------------------|-------------|
| 1. Ethanol | 7. Methyl acetate | 13. i-Butanol | 19. MIBK | 25. Cumene |
| 2. Pentane | 8. Methyl t-butyl ether | 14. i-Propyl acetate | 20. i-Amylalcohol | 26. Anisole |
| 3. Ethyl ether | 9. 1-Propanol | 15. Acetic acid | 21. i-Butyl acetate | |
| 4. Acetone | 10. MEK | 16. Heptane | 22. n-Amyl alcohol | |
| 5. 2-Propanol | 11. Ethyl acetate | 17. n-Butanol | 23. Butyl acetate | |
| 6. Ethyl formate | 12. sec-Butanol | 18. Propyl acetate | 24. Dimethyl sulfoxide | |

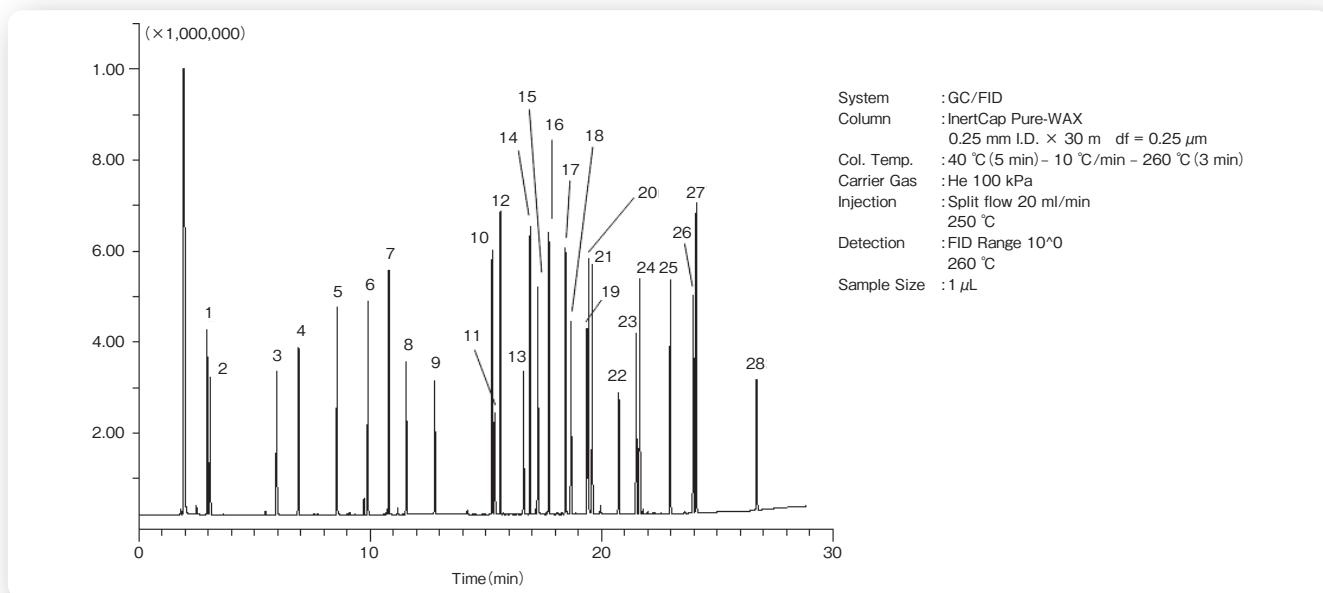
Residual solvents in pharmaceuticals Class3



System : GC/FID
Column : InertCap Pure-WAX
0.53 mm I.D. × 30 m df = 1.00 μ m
Col. Temp. : 40 °C – 5 °C/min – 140 °C
Carrier Gas : He 20 kPa
Injection : Split flow 200 mL/min
240 °C
Detection : FID 240 °C
Sample Size : Mixed evenly 0.4 μ L

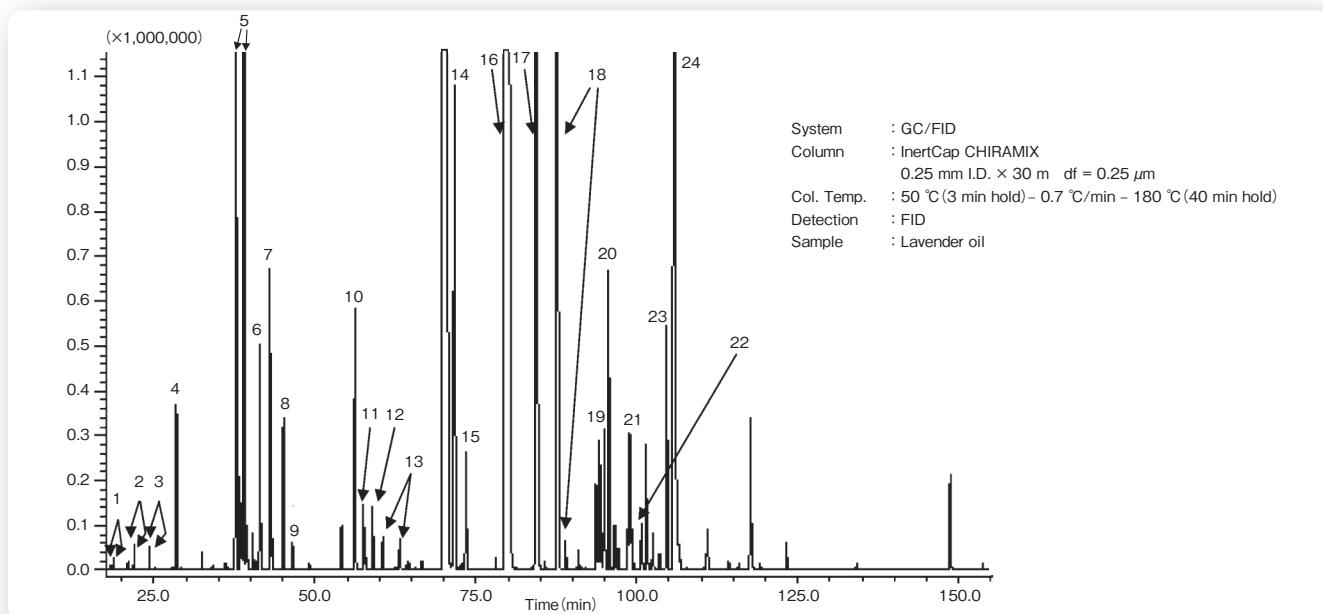
- | | | | | |
|-------------------------|----------------------|---------------------|--------------------|------------------------|
| 1. Pentane | 7. Ethyl acetate | 13. Propyl acetate | 19. i-Butanol | 25. Acetic acid |
| 2. Ethyl ether | 8. Ethyl formate | 14. MIBK | 20. n-Butanol | 26. Dimethyl sulfoxide |
| 3. Methyl t-butyl ether | 9. MEK | 15. i-Butyl acetate | 21. Cumene | |
| 4. Heptane | 10. i-Propyl acetate | 16. sec-Butanol | 22. i-Amyl alcohol | |
| 5. Acetone | 11. 2-Propanol | 17. 1-Propanol | 23. n-Amylalcohol | |
| 6. Methyl acetate | 12. Ethanol | 18. Butyl acetate | 24. Anisole | |

Fragrances



1. Butyraldehyde	7. Amyl alcohol	13. Butyric acid	19. Hexanoic acid	25. Eugenol
2. Ethyl acetate	8. 1-Octanal	14. dl-Menthol	20. α-Ionone	26. γ-Undecalactone
3. 1-Propanol	9. Allyl isothiocyanate	15. Citronellyl acetate	21. Geraniol	27. Cinnamyl alcohol
4. Butyl acetate	10. Benzaldehyde	16. d-Borneol	22. Maltol	28. Vanillin
5. 1-Butanol	11. Propionic acid	17. Methyl salicylate	23. Anisaldehyde	
6. 1,8-Cineol	12. Linalool	18. n-Decanol	24. Cinnam aldehyde	

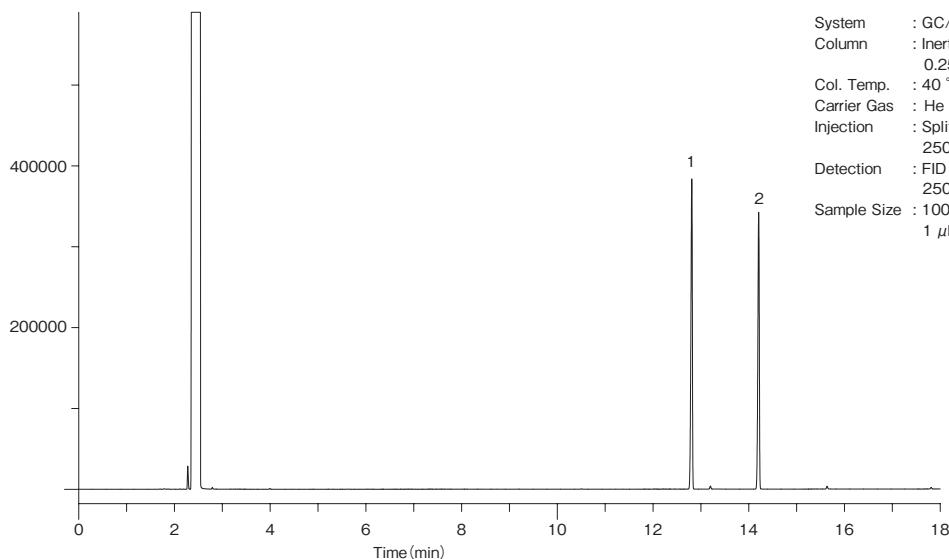
Lavender (Optical isomers)



1. α-Thujene	6. 1,8-Cineole	11. 3-Octanol	16. Linalyl acetate	21. α-Santalene
2. α-Pinene	7. 3-Octanone	12. 1-Octen-3-ol	17. Geranyl acetate	22. α-Bergamotene
3. Camphene	8. Hexyl acetate	13. (trans/cis)-Linalool oxid	18. Terpinen-4-ol	23. Neryl acetate
4. β-Pinene	9. Terpinolene	14. Linalool	19. Borneol	24. Caryophyllene
5. β-Ocimene	10. 1-Octen-3-yl acetate	15. Hexyl butyrate	20. α-Terpineol	

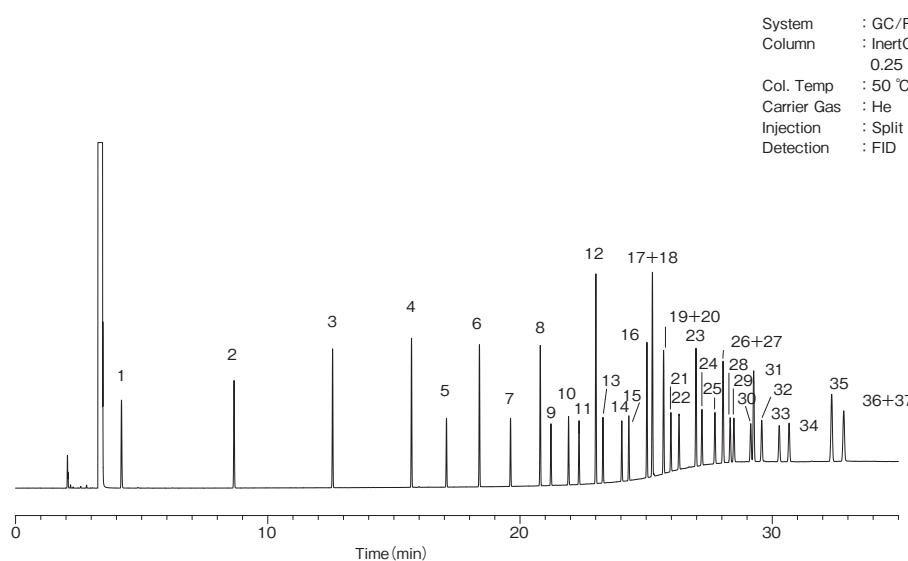
Applications

Indole/Skatole



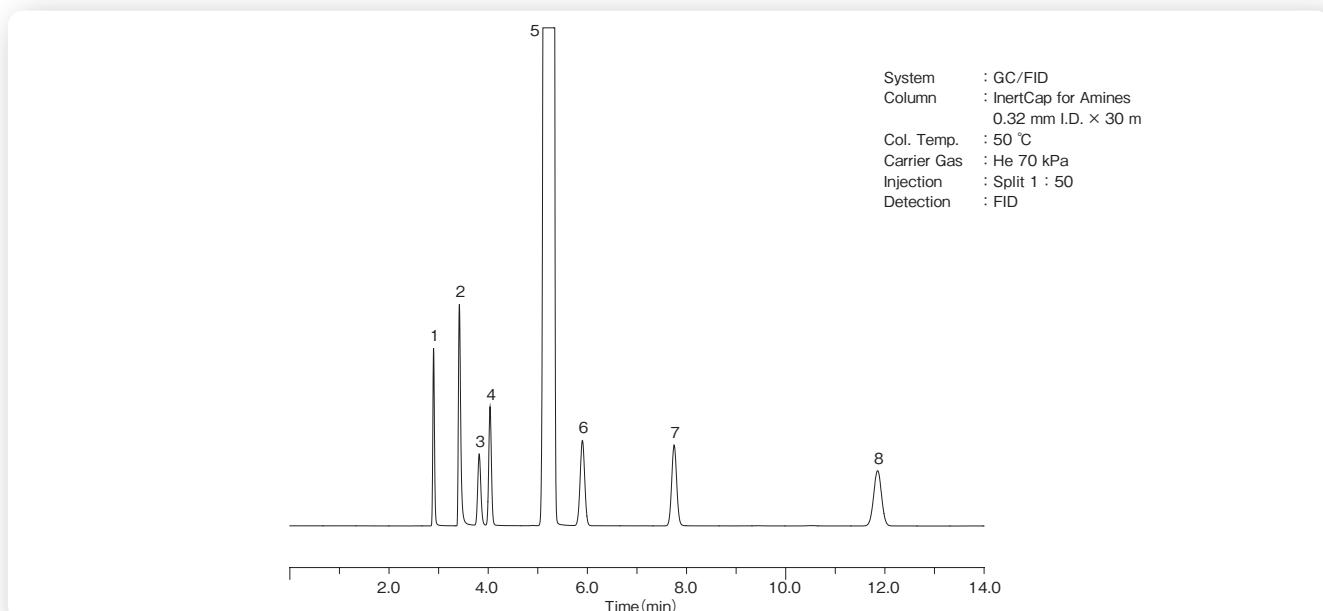
1. Indole
2. Skatole

FAME



1. C4:0	7. C13:0	13. C16:1	19. C18:2n6c	25. C20:2	31. C22:0	37. C24:1n9
2. C6:0	8. C14:0	14. C17:0	20. C18:2n6t	26. C20:3n6	32. C22:1n9	
3. C8:0	9. C14:1	15. C17:1	21. C18:3n6	27. C20:4n6	33. C22:2	
4. C10:0	10. C15:0	16. C18:0	22. C18:3n3	28. C21:0	34. C23:0	
5. C11:0	11. C15:1	17. C18:1n9c	23. C20:0	29. C20:3n3	35. C24:0	
6. C12:0	12. C16:0	18. C18:1n9t	24. C20:1n9	30. C20:5n3	36. C22:6n3	

VOC & Amines



- | | |
|-------------------------|---------------|
| 1. Methanol | 6. n-Pentane |
| 2. Dimethylamine (DMA) | 7. n-Propanol |
| 3. Trimethylamine (TMA) | 8. n-Hexane |
| 4. Ethanol | |
| 5. iso-Propanol | |

GC Capillary Columns

Special Columns-Other Columns

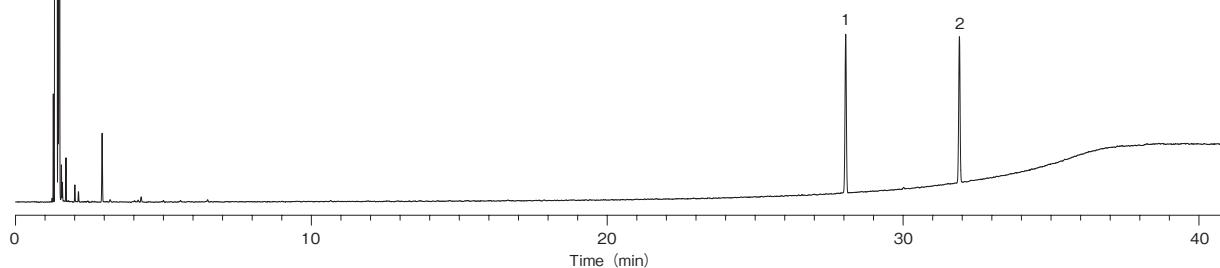
GC Accessories

Applications

Applications

Magnesium stearic by Japanese Pharmacopeia

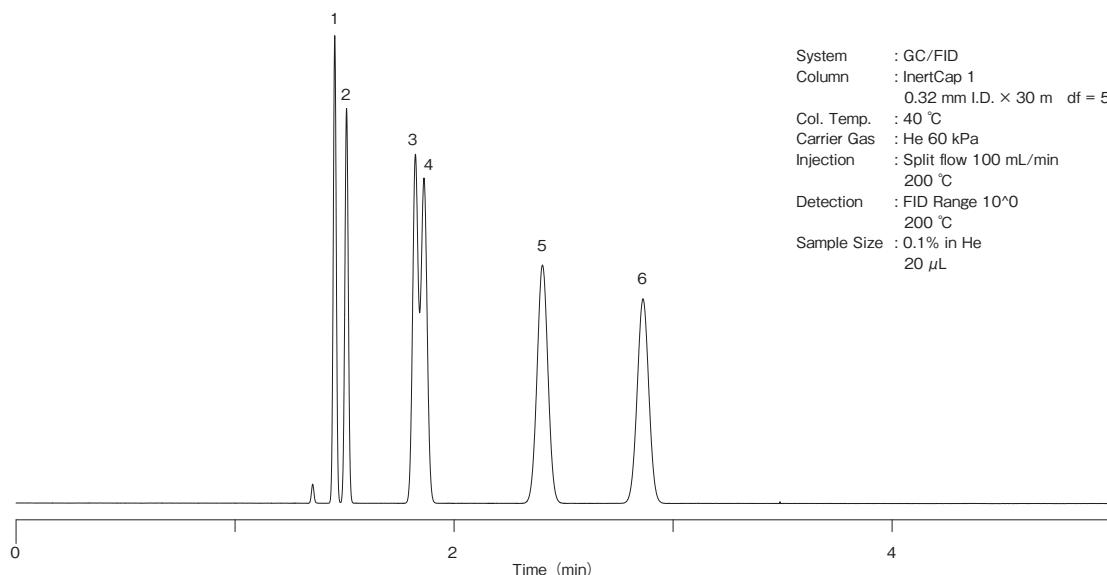
System : GC/FID
Column : InertCap WAX-HT
0.32 mm I.D. × 30 m df = 0.5 μ m
Col. Temp. : 70 °C (2 min hold)–5 °C/min–240 °C (5 min hold)
Carrier Gas : He 90 kPa
Injection : Split flow 100 ml/min
220 °C
Detection : FID Range10¹
260 °C
Sample Size : 1 μ L



1. Methyl palmitate
2. Methyl stearate

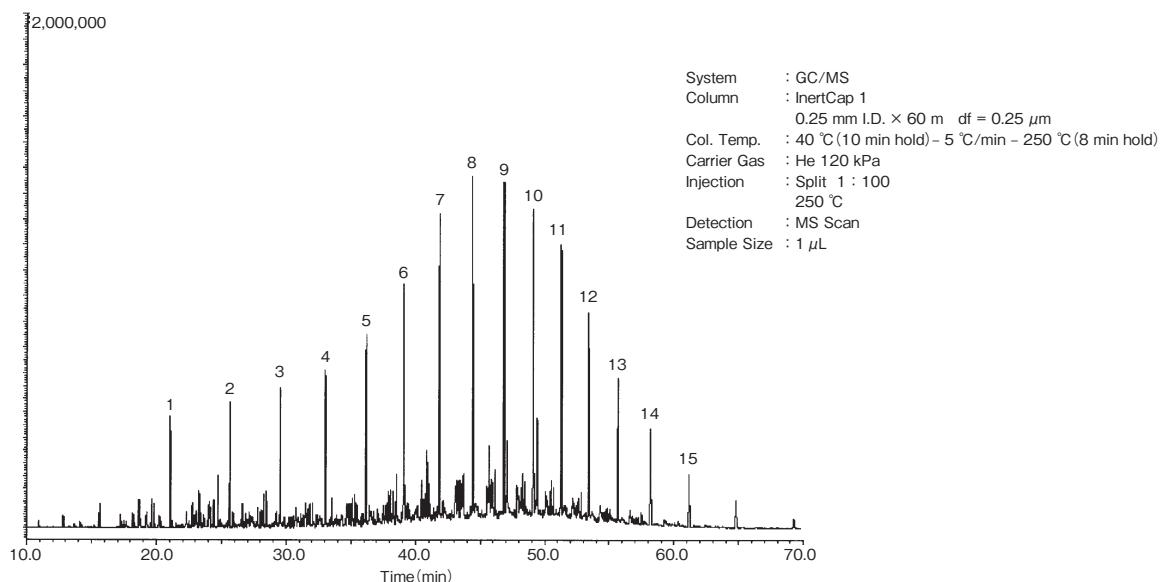
Hydrocarbons C2-C4

System : GC/FID
Column : InertCap 1
0.32 mm I.D. × 30 m df = 5.0 μ m
Col. Temp. : 40 °C
Carrier Gas : He 60 kPa
Injection : Split flow 100 mL/min
200 °C
Detection : FID Range 10⁰
200 °C
Sample Size : 0.1% in He
20 μ L



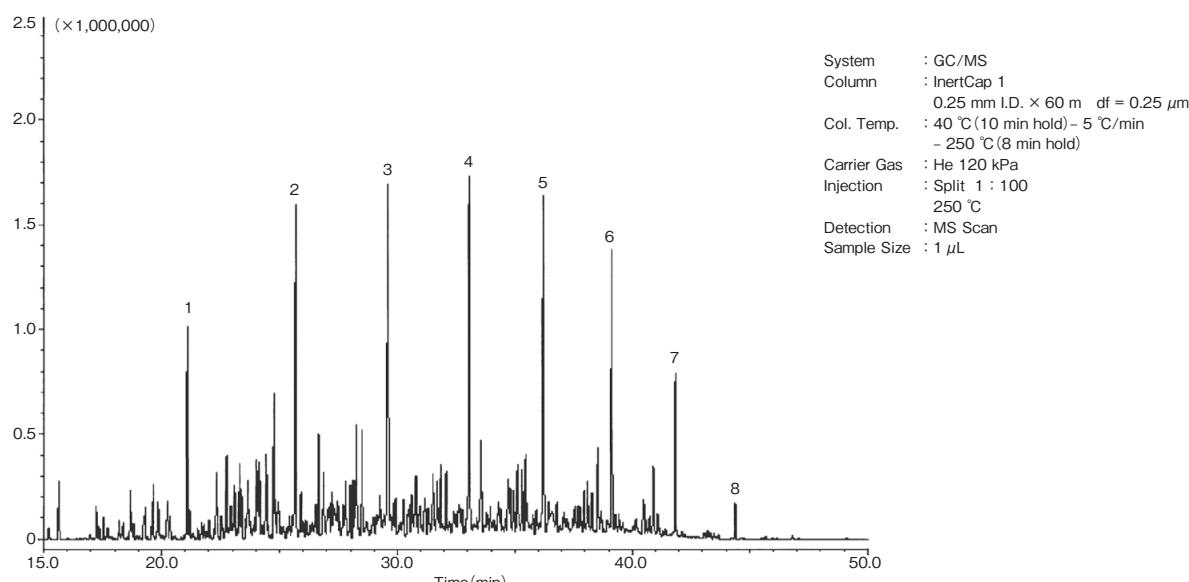
1. Ethylene
2. Ethane
3. Propylene
4. Propane
5. iso-Butane
6. n-Butane

Diesel



- | | | |
|--------------|----------------|-----------------|
| 1. Nonane | 6. Tetradecane | 11. Nonadecane |
| 2. Decane | 7. Pentadecane | 12. Eicosane |
| 3. Undecane | 8. Hexadecane | 13. Heneicosane |
| 4. Dodecane | 9. Heptadecane | 14. Docosane |
| 5. Tridecane | 10. Octadecane | 15. Tricosane |

Kerosene



- | | |
|--------------|----------------|
| 1. Nonane | 6. Tetradecane |
| 2. Decane | 7. Pentadecane |
| 3. Undecane | 8. Hexadecane |
| 4. Dodecane | |
| 5. Tridecane | |

GC Capillary Columns

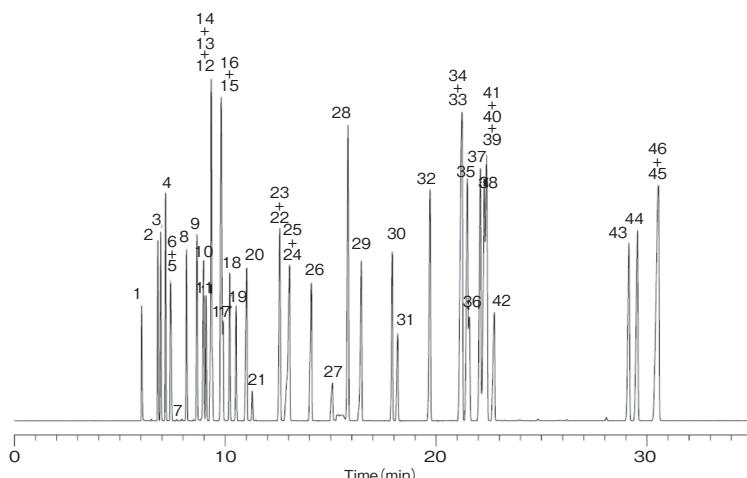
Special Columns-Other Columns

GC Accessories

Applications

Applications

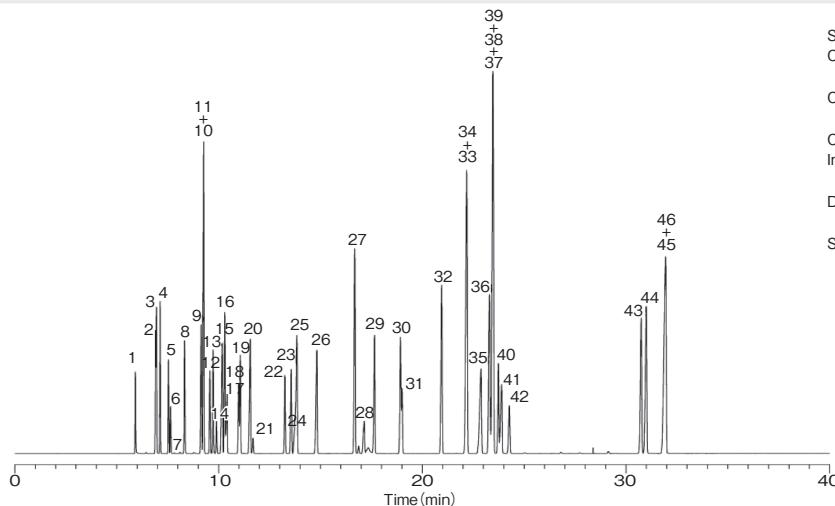
Organic solvents 46 compounds



System : GC/FID
 Column : InertCap 1
 0.25 mm I.D. × 60 m df = 0.40 μ m
 Col. Temp. : 40 °C (5 min hold) – 4 °C/min
 – 230 °C (5 min hold)
 Carrier Gas : He 130 kPa
 Injection : Split 100 mL/min
 250 °C
 Detection : FID Range 10^1
 250 °C
 Sample Size : Mixed evenly 1 μ L

1. Methanol	11. cis-1,2-Dichloroethylene	21. Carbon Tetrachloride	31. Tetrachloroethylene	41. Cellosolve acetate
2. Acetone	12. Ethyl acetate	22. 1,4-Dioxane	32. Chlorobenzene	42. Butyl cellosolve
3. i-Propanol	13. n-Hexane	23. Trichloroethylene	33. m-Xylene	43. o-Dichlorobenzene
4. Ethyl ether	14. Chloroform	24. Ethyl cellosolve	34. p-Xylene	44. o-Cresol
5. Dichloromethane	15. Tetrahydrofuran	25. n-Propyl acetate	35. Cyclohexanone	45. p-Cresol
6. Methyl acetate	16. i-Butanol	26. i-Amyl alcohol	36. Cyclohexanol	46. m-Cresol
7. Carbon disulfide	17. Methyl cellosolve	27. N,N-Dimethyl formamide	37. Styrene	
8. trans-1,2-Dichloroethylene	18. 1,2-Dichloroethane	28. Toluene	38. 1-Methylcyclohexanol	
9. Methyl ethyl keton	19. 1,1,1-Trichloroethane	29. Methyl-n-butyl ketone	39. o-Xylene	
10. 2-Butanol	20. n-Butanol	30. n-Butyl acetate	40. 1,1,2,2-Tetrachloroethane	

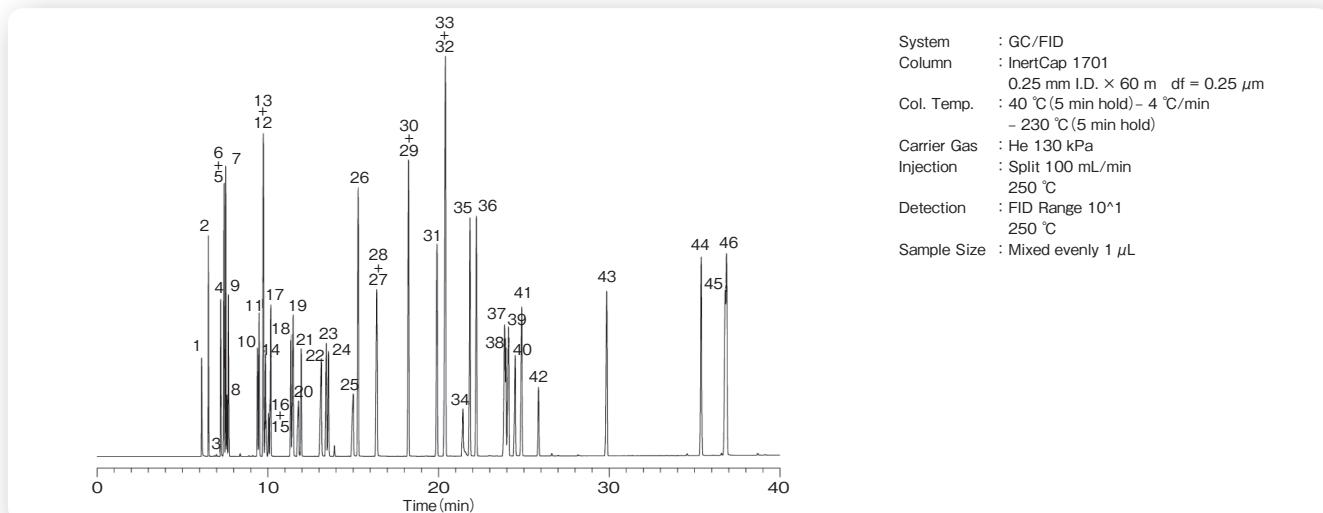
Organic solvents 46 compounds



System : GC/FID
 Column : InertCap 5
 0.25 mm I.D. × 60 m df = 0.40 μ m
 Col. Temp. : 40 °C (5 min hold) – 4 °C/min
 – 230 °C (5 min hold)
 Carrier Gas : He 130 kPa
 Injection : Split 100 mL/min
 250 °C
 Detection : FID Range 10^1
 250 °C
 Sample Size : Mixed evenly 1 μ L

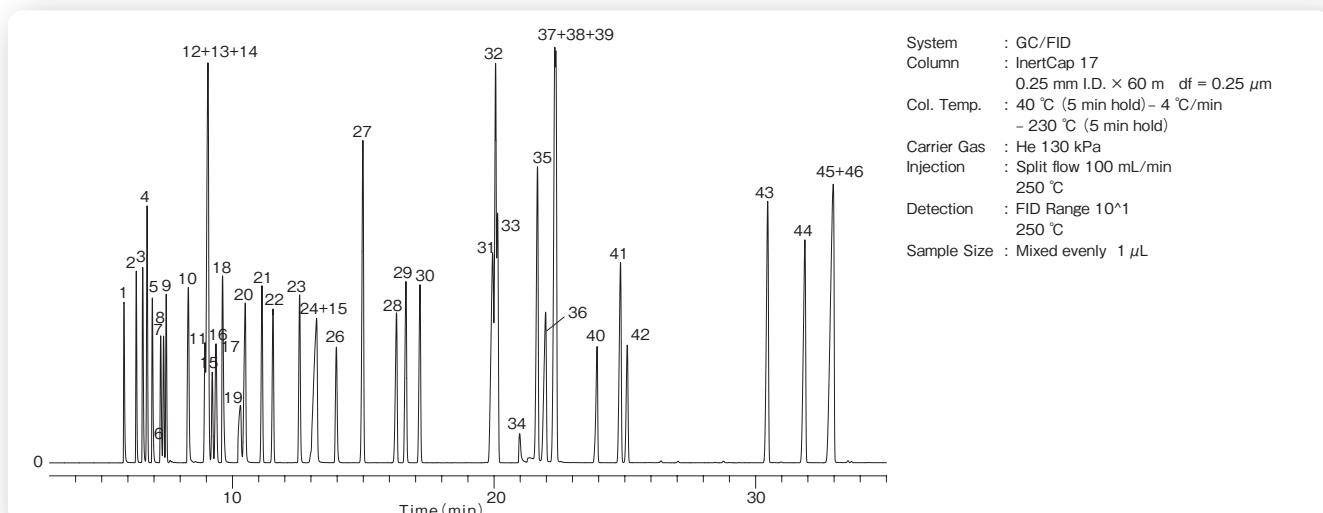
1. Methanol	11. n-Hexane	21. Carbon Tetrachloride	31. Tetrachloroethylene	41. Butyl cellosolve
2. Acetone	12. cis-1,2-Dichloroethylene	22. Trichloroethylene	32. Chlorobenzene	42. 1,1,2,2-Tetrachloroethane
3. i-Propanol	13. Ethyl acetate	23. 1,4-Dioxane	33. m-Xylene	43. o-Dichlorobenzene
4. Ethyl ether	14. Chloroform	24. Ethyl cellosolve	34. p-Xylene	44. o-Cresol
5. Methyl acetate	15. i-Butanol	25. n-Propyl acetate	35. Cyclohexanone	45. p-Cresol
6. Dichloromethane	16. Tetrahydrofuran	26. i-Amyl alcohol	36. Styrene	46. m-Cresol
7. Carbon disulfide	17. Methyl cellosolve	27. N,N-Dimethyl formamide	37. Cyclohexanol	
8. trans-1,2-Dichloroethylene	18. 1,1,1-Trichloroethane	28. Toluene	38. 1-Methylcyclohexanol	
9. Methyl ethyl keton	19. 1,2-Dichloroethane	29. Methyl-n-butyl ketone	39. o-Xylene	
10. 2-Butanol	20. n-Butanol	30. n-Butyl acetate	40. Cellosolve acetate	

Organic solvents 46 compounds



1. Methanol	11. Ethyl acetate	21. Trichloroethylene	31. Chlorobenzene	41. Cyclohexanone
2. Ethyl ether	12. Tetrahydrofuran	22. n-Butanol	32. m-Xylene	42. 1,1,2,2-Tetrachloroethane
3. Carbon disulfide	13. Methyl ethyl keton	23. n-Propyl acetate	33. p-Xylene	43. o-Dichlorobenzene
4. Acetone	14. 1,1,1-Trichloroethane	24. 1,4-Dioxane	34. N,N-Dimethyl formamide	44. o-Cresol
5. i-Propanol	15. Carbon Tetrachloride	25. Ethyl cellosolve	35. o-Xylene	45. p-Cresol
6. Methyl acetate	16. Chloroform	26. Toluene	36. Styrene	46. m-Cresol
7. n-Hexane	17. 2-Butanol	27. Tetrachloroethylene	37. 1-Methylcyclohexanol	
8. Dichloromethane	18. 1,2-Dichloroethane	28. i-Amyl alchol	38. Cellosolve acetate	
9. trans-1,2-Dichloroethylene	19. i-Butanol	29. Methyl-n-butyl ketone	39. Cyclohexanol	
10. cis-1,2-Dichloroethylene	20. Methyl cellosolve	30. n-Butyl acetate	40. Butyl cellosolve	

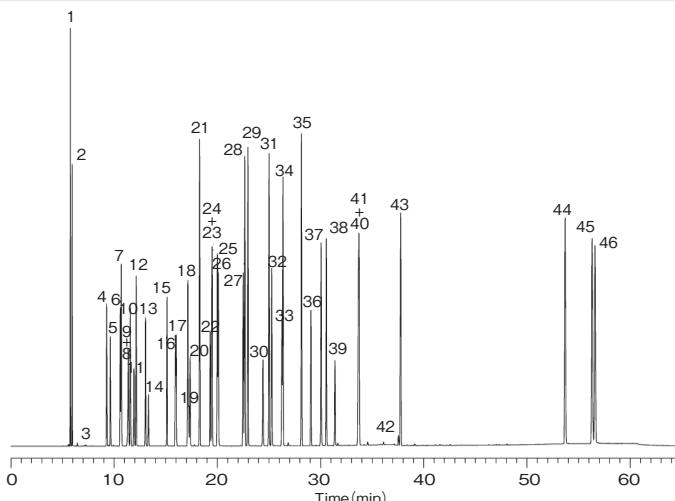
Organic solvents 46 compounds



1. Methanol	11. cis-1,2-Dichloroethylene	21. 1,2-Dichloroethane	31. p-Xylene	41. Cyclohexanone
2. Ethyl ether	12. Methyl ethyl keton	22. Trichloroethylene	32. m-Xylene	42. 1,1,2,2-Tetrachloroethane
3. i-Propanol	13. i-Butanol	23. n-Propyl acetate	33. Chlorobenzene	43. o-Dichlorobenzene
4. n-Hexane	14. Ethyl acetate	24. i-Amyl alchol	34. N,N-Dimethyl formamide	44. o-Cresol
5. Acetone	15. Chloroform	25. Ethyl cellosolve	35. o-Xylene	45. p-Cresol
6. Carbon disulfide	16. 1,1,1-Trichloroethane	26. 1,4-Dioxane	36. 1-Methylcyclohexanol	46. m-Cresol
7. Methyl acetate	17. Carbon Tetrachloride	27. Toluene	37. Cyclohexanol	
8. Dichloromethane	18. Tetrahydrofuran	28. Tetrachloroethylene	38. Butyl cellosolve	
9. trans-1,2-Dichloroethylene	19. Methylcellosolve	29. Methyl-n-butyl ketone	39. Styrene	
10. 2-Butanol	20. n-Butanol	30. n-Butyl acetate	40. Cellosolve acetate	

Applications

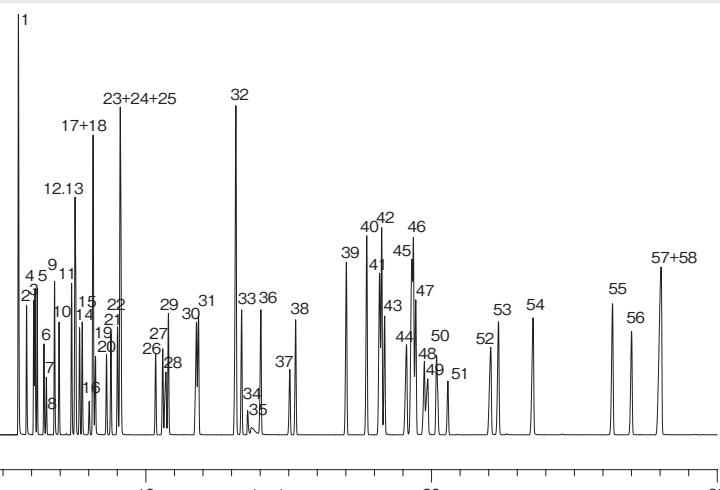
Organic solvents 46 compounds



System : GC/FID
 Column : InertCap WAX
 0.25 mm I.D. × 60 m df = 0.25 μm
 Col. Temp. : 40 °C (5 min hold) – 4 °C/min
 – 230 °C (5 min hold)
 Carrier Gas : He 130 kPa
 Injection : Split flow 100 mL/min
 250 °C
 Detection : FID Range 10¹
 250 °C
 Sample Size : Mixed evenly 1 μL

1. n-Hexane	11. Methanol	21. Toluene	31. o-Xylene	41. Cyclohexanol
2. Ethyl ether	12. Methyl ethyl keton	22. 1,4-Dioxane	32. i-Amyl alcohol	42. 1,1,2,2-Tetrachloroethane
3. Carbon disulfide	13. i-Propanol	23. n-Butyl acetate	33. Ethyl cellosolve	43. o-Dichlorobenzene
4. Acetone	14. Dichloromethane	24. 1,2-Dichloroethane	34. Chlorobenzene	44. o-Cresol
5. Methyl acetate	15. n-Propyl acetate	25. Methyl-n-butyl ketone	35. Styrene	45. p-Cresol
6. trans-1,2-Dichloroethylene	16. cis-1,2-Dichloroethylene	26. i-Butanol	36. Cellosolve acetate	46. m-Cresol
7. Tetrahydrofuran	17. Trichloroethylene	27. n-Butanol	37. Cyclohexanone	
8. Carbon Tetrachloride	18. 2-Butanol	28. p-Xylene	38. 1-Methylcyclohexanol	
9. 1,1,1-Trichloroethane	19. Chloroform	29. m-Xylene	39. N,N-Dimethyl formamide	
10. Ethyl acetate	20. Tetrachloroethylene	30. Methyl cellosolve	40. Butyl cellosolve	

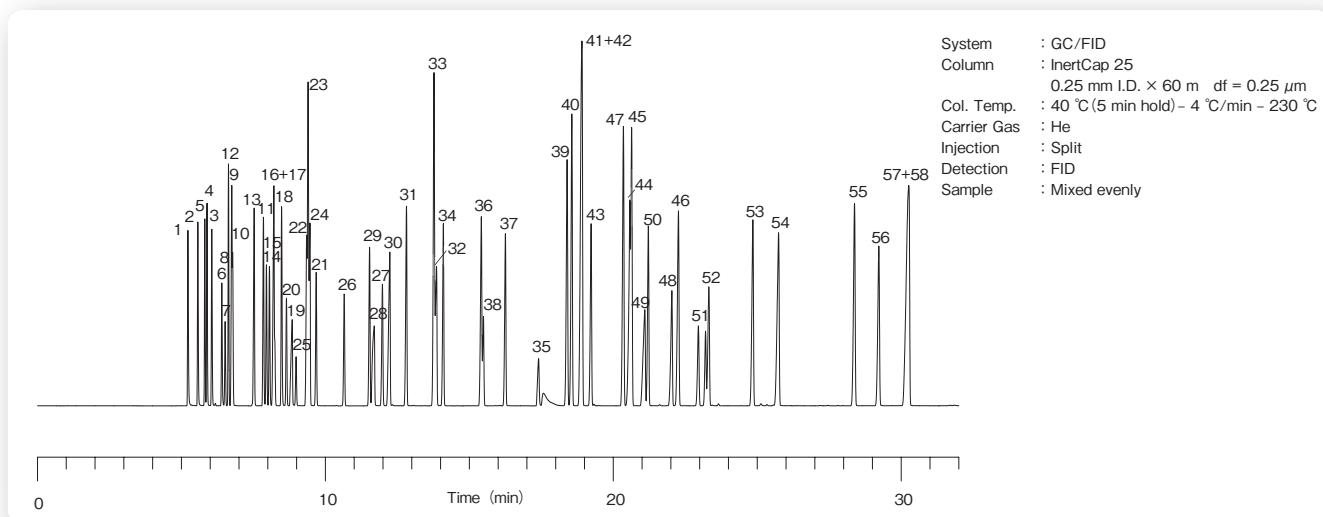
Organic solvents 58 compounds



System : GC/FID
 Column : InertCap 5MS/Sil
 0.25 mm I.D. × 60 m df = 0.25 μm
 Col. Temp. : 40 °C (5 min hold) – 4 °C/min – 230 °C
 Carrier Gas : He
 Injection : Split
 Detection : FID
 Sample : Mixed evenly

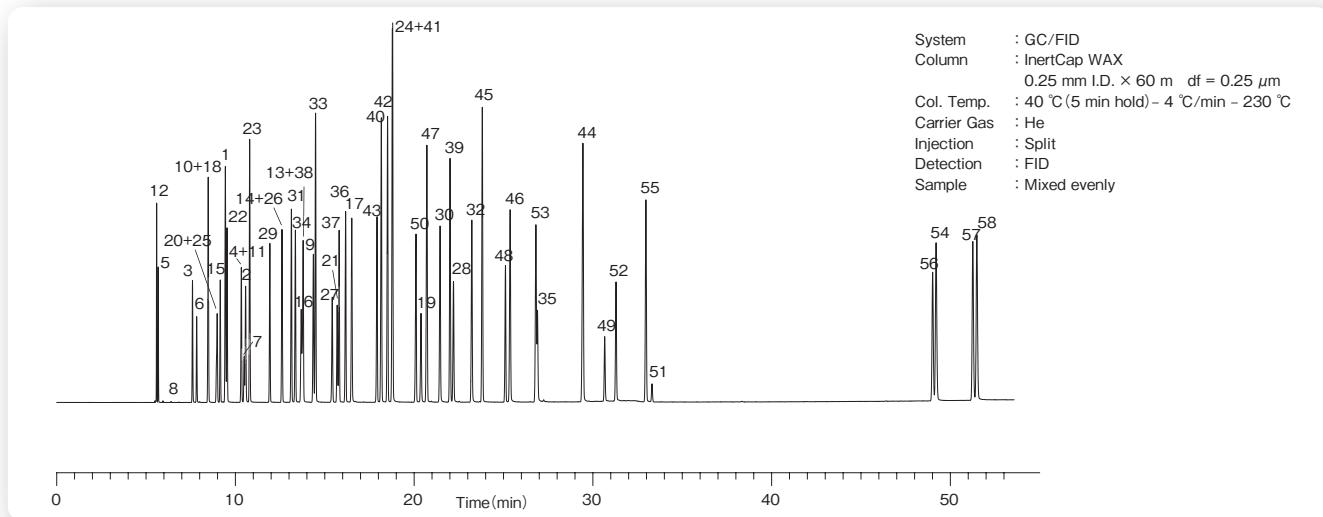
1. Methanol	13. 2-Butanol	25. Carbon Tetrachloride	37. n-Butyl acetate	49. Butyl cellosolve
2. Ethanol	14. cis-1,2-Dichloroethylene	26. Trichloroethylene	38. Tetrachloroethylene	50. n-Amyl acetate
3. Acetone	15. Ethyl acetate	27. 1,4-Dioxane	39. Chlorobenzene	51. 1,1,2,2-tetrachloroethane
4. i-Propanol	16. Chloroform	28. Ethyl cellosolve	40. Ethylbenzene	52. Methylcyclohexanol
5. Ethyl ether	17. i-Butanol	29. n-Propyl acetate	41. m-Xylene	53. Methylcyclohexanone
6. Methyl acetate	18. Tetrahydrofuran	30. i-Amyl alcohol	42. p-Xylene	54. Phenol
7. Dichloromethane	19. Methyl cellosolve	31. Methyl i-butyl ketone	43. i-Amyl acetate	55. o-Dichlorobenzene
8. Carbon disulfide	20. 1,1,1-Trichloroethane	32. n-Amyl alcohol	44. Cyclohexanol	56. o-Cresol
9. n-Propanol	21. 1,2-Dichloroethane	33. Toluene	45. Styrene	57. p-Cresol
10. trans-1,2-Dichloroethylene	22. i-Propyl acetate	34. i-Butyl acetate	46. Cyclohexanone	58. m-Cresol
11. Methyl ethyl ketone	23. Benzene	35. N,N-Dimethylformamide	47. o-Xylene	
12. Hexane	24. n-Butanol	36. Methyl n-butyl ketone	48. Cellosolve acetate	

Organic solvents 58 compounds



1. Methanol	13. 2-Butanol	25. Carbon Tetrachloride	37. n-Butyl acetate	49. Butyl cellosolve
2. Ethanol	14. cis-1,2-Dichloroethylene	26. Trichloroethylene	38. Tetrachloroethylene	50. n-Amyl acetate
3. Acetone	15. Ethyl acetate	27. 1,4-Dioxane	39. Chlorobenzene	51. 1,1,2,2-tetrachloroethane
4. i-Propanol	16. Chloroform	28. Ethyl cellosolve	40. Ethylbenzene	52. Methylcyclohexanol
5. Ethyl ether	17. i-Butanol	29. n-Propyl acetate	41. m-Xylene	53. Methylcyclohexanone
6. Methyl acetate	18. Tetrahydrofuran	30. i-Amyl alcohol	42. p-Xylene	54. Phenol
7. Dichloromethane	19. Methyl cellosolve	31. Methyl i-butyl ketone	43. i-Amyl acetate	55. o-Dichlorobenzene
8. Carbon disulfide	20. 1,1,1-Trichloroethane	32. n-Amyl alcohol	44. Cyclohexanol	56. o-Cresol
9. n-Propanol	21. 1,2-Dichloroethane	33. Toluene	45. Styrene	57. p-Cresol
10. trans-1,2-Dichloroethylene	22. i-Propyl acetate	34. i-Butyl acetate	46. Cyclohexanone	58. m-Cresol
11. Methyl ethyl ketone	23. Benzene	35. N,N-Dimethylformamide	47. o-Xylene	
12. Hexane	24. n-Butanol	36. Methyl n-butyl ketone	48. Cellosolve acetate	

Organic solvents 58 compounds



1. Methanol	13. 2-Butanol	25. Carbon Tetrachloride	37. n-Butyl acetate	49. Butyl cellosolve
2. Ethanol	14. cis-1,2-Dichloroethylene	26. Trichloroethylene	38. Tetrachloroethylene	50. n-Amyl acetate
3. Acetone	15. Ethyl acetate	27. 1,4-Dioxane	39. Chlorobenzene	51. 1,1,2,2-tetrachloroethane
4. i-Propanol	16. Chloroform	28. Ethyl cellosolve	40. Ethylbenzene	52. Methylcyclohexanol
5. Ethyl ether	17. i-Butanol	29. n-Propyl acetate	41. m-Xylene	53. Methylcyclohexanone
6. Methyl acetate	18. Tetrahydrofuran	30. i-Amyl alcohol	42. p-Xylene	54. Phenol
7. Dichloromethane	19. Methyl cellosolve	31. Methyl i-butyl ketone	43. i-Amyl acetate	55. o-Dichlorobenzene
8. Carbon disulfide	20. 1,1,1-Trichloroethane	32. n-Amyl alcohol	44. Cyclohexanol	56. o-Cresol
9. n-Propanol	21. 1,2-Dichloroethane	33. Toluene	45. Styrene	57. p-Cresol
10. trans-1,2-Dichloroethylene	22. i-Propyl acetate	34. i-Butyl acetate	46. Cyclohexanone	58. m-Cresol
11. Methyl ethyl ketone	23. Benzene	35. N,N-Dimethylformamide	47. o-Xylene	
12. Hexane	24. n-Butanol	36. Methyl n-butyl ketone	48. Cellosolve acetate	

Ako nás možno kontaktovať:

AZ Chrom s.r.o.
Robotnícka 10
831 03 Bratislava
Tel. 0907 244526
Fax. 02 20715811
azetchrom@hplc.sk
www.azetchrom.sk