Application Specific Columns

MZ ANALYSENTECHNIK

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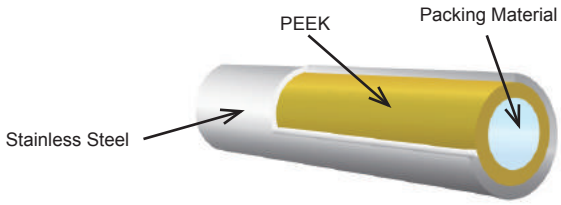
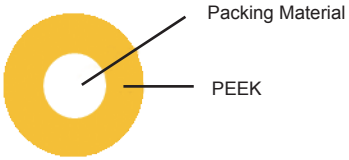
Metal-Free PEEK Columns

UHPLC-PEEK columns



- Material : Wetted Part … PEEK
  Outer Part … Stainless Steel
- Particle Sizes : 1.9 µm, 2 µm, 3 µm
- Packing Materials : InertSustain & Inertsil series
- Max. Operating Pressure : 80 MPa (800 bar): 1.9 µm, 2 µm
  50 MPa (500 bar): 3 µm

PEEK columns



- Material : PEEK
- Particle Sizes : 4 µm, 5 µm, 10 µm
- Packing Materials : InertSustain & Inertsil series
- Max. Operating Pressure : 20 MPa (200 bar)

Analytical Column List

Other packing material or dimensions are on request.

InertSustain C18

Particle Size	Length (mm)	I.D. (mm)	
		2.1	4.6
2 µm	50	5020-87400	5020-87403
	100	5020-87401	5020-87404
	150	5020-87402	5020-87405
3 µm	50	5020-87412	5020-87416
	100	5020-87413	5020-87417
	150	5020-87414	5020-87418
	250	5020-87415	5020-87419

Particle Size	Length (mm)	I.D. (mm)	
		2.1	4.6
5 µm	50	5020-87468	5020-87472
	100	5020-87469	5020-87473
	150	5020-87470	5020-87474
	250	5020-87471	5020-87475

InertSustain AQ-C18

Particle Size	Length (mm)	I.D. (mm)	
		2.1	4.6
1.9 µm	50	5020-87068	5020-87065
	100	5020-87069	5020-87066
	150	5020-87070	5020-87067
3 µm	50	5020-87061	5020-87057
	100	5020-87062	5020-87058
	150	5020-87063	5020-87059
	250	5020-87064	5020-87060

Particle Size	Length (mm)	I.D. (mm)	
		2.1	4.6
5 µm	50	5020-87053	5020-87049
	100	5020-87054	5020-87050
	150	5020-87055	5020-87051
	250	5020-87056	5020-87052

InertSustainSwift C18

Particle Size	Length (mm)	I.D. (mm)	
		2.1	4.6
1.9 µm	50	5020-87548	5020-87551
	100	5020-87549	5020-87552
	150	5020-87550	5020-87553
3 µm	50	5020-87554	5020-87558
	100	5020-87555	5020-87559
	150	5020-87556	5020-87560
	250	5020-87557	5020-87561

Particle Size	Length (mm)	I.D. (mm)	
		2.1	4.6
5 µm	50	5020-87562	5020-87566
	100	5020-87563	5020-87567
	150	5020-87564	5020-87568
	250	5020-87565	5020-87569

Inertsil ODS-HL

Particle Size	Length (mm)	I.D. (mm)	
		2.1	4.6
3 µm	50	5020-87532	5020-87536
	100	5020-87533	5020-87537
	150	5020-87534	5020-87538
	250	5020-87535	5020-87539

Particle Size	Length (mm)	I.D. (mm)	
		2.1	4.6
5 µm	50	5020-87540	5020-87544
	100	5020-87541	5020-87545
	150	5020-87542	5020-87546
	250	5020-87543	5020-87547

Inertsil ODS-4

Particle Size	Length (mm)	I.D. (mm)	
		2.1	4.6
3 µm	50	5020-87452	5020-87456
	100	5020-87453	5020-87457
	150	5020-87454	5020-87458
	250	5020-87455	5020-87459

Particle Size	Length (mm)	I.D. (mm)	
		2.1	4.6
5 µm	50	5020-87508	5020-87512
	100	5020-87509	5020-87513
	150	5020-87510	5020-87514
	250	5020-87511	5020-87515

Inertsil ODS-3

Particle Size	Length (mm)	I.D. (mm)	
		2.1	4.6
3 µm	50	5020-87444	5020-87448
	100	5020-87445	5020-87449
	150	5020-87446	5020-87450
	250	5020-87447	5020-87451

Particle Size	Length (mm)	I.D. (mm)	
		2.1	4.6
5 µm	50	5020-87500	5020-87504
	100	5020-87501	5020-87505
	150	5020-87502	5020-87506
	250	5020-87503	5020-87507

InertSustain PFP

Particle Size	Length (mm)	I.D. (mm)	
		2.1	4.6
3 µm	50	5020-87592	5020-87596
	100	5020-87593	5020-87597
	150	5020-87594	5020-87598
	250	5020-87595	5020-87599

Particle Size	Length (mm)	I.D. (mm)	
		2.1	4.6
5 µm	50	5020-87600	5020-87604
	100	5020-87601	5020-87605
	150	5020-87602	5020-87606
	250	5020-87603	5020-87607

InertSustain Phenylhexyl

Particle Size	Length (mm)	I.D. (mm)	
		2.1	4.6
3 µm	50	5020-87436	5020-87440
	100	5020-87437	5020-87441
	150	5020-87438	5020-87442
	250	5020-87439	5020-87443

Particle Size	Length (mm)	I.D. (mm)	
		2.1	4.6
5 µm	50	5020-87492	5020-87496
	100	5020-87493	5020-87497
	150	5020-87494	5020-87498
	250	5020-87495	5020-87499

InertSustain Amide

Particle Size	Length (mm)	I.D. (mm)	
		2.1	4.6
3 µm	50	5020-87420	5020-87424
	100	5020-87421	5020-87425
	150	5020-87422	5020-87426
	250	5020-87423	5020-87427

Particle Size	Length (mm)	I.D. (mm)	
		2.1	4.6
5 µm	50	5020-87476	5020-87480
	100	5020-87477	5020-87481
	150	5020-87478	5020-87482
	250	5020-87479	5020-87483

Inertsil ODS-2

Particle Size	Length (mm)	I.D. (mm)
		4.6
5 µm	150	5020-87460
	250	5020-87461

Inertsil WP300 Diol

Particle Size	Length (mm)	I.D. (mm)
		4.6
5 µm	150	5020-87466
	250	5020-87467

Inertsil C8

Particle Size	Length (mm)	I.D. (mm)
		4.6
5 µm	150	5020-87462
	250	5020-87463

Inertsil C4

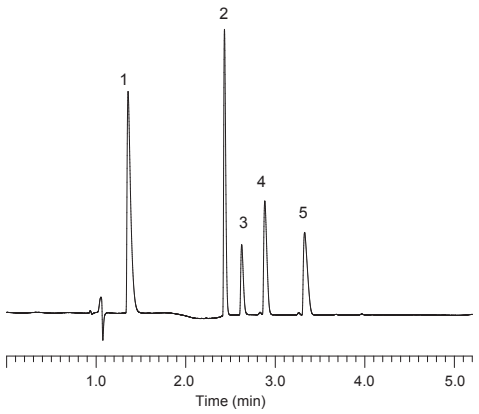
Particle Size	Length (mm)	I.D. (mm)
		4.6
5 µm	150	5020-87464
	250	5020-87465

InertSustainBio C18

- **Base Material : High Purity ES Silica Gel**
- **Particle Size : 1.9 µm, 3 µm**
- **Surface Area : 200 m^2/g**
- **Pore Size : 200 Å (20 nm)**
- **Pore Volume : 1.00 mL/g**
- **Functional Group : Octadecyl**
- **End-capping : Yes**
- **Carbon Loading : 9.0 %**
- **USP Code : L1**
- **pH Range : 1 - 10**
- **Max. Operating Pressure : 80MPa, 800 bar for 1.9 µm columns**
  50MPa, 500 bar for 3 µm columns

The 200 Å pore size silica creates the opportunity to separate compounds having a molecular weight from small to large molecules. In addition, the usage of highly inert packing material packed into a new Steel-Coated-PEEK hardware deliver excellent peak shapes for various analytes without any adsorption.

Analysis of Peptides

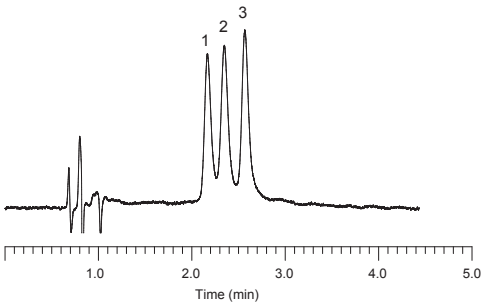


Conditions

Column	: InertSustainBio C18 (1.9 µm, 100 × 2.1 mm I.D)
Eluent	: A) 0.1% HCOOH in H_2O B) 0.1% HCOOH in CH_3CN A/B = 95/5 - 0.5 min - 70/30 - 2.5 min - 60/40 - 0.5 min - 60/40 - 0.01/min - 95/5 - 6.49 min - 95/5, v/v
Flow Rate	: 0.3 mL/min
Col. Temp.	: 40 ℃
Detection	: UV 280 nm
Injection Vol.	: 5 µL

Sample :
1. Gly-Tyr
2. Val-Tyr-Val
3. Angiotensin II
4. Methionine encephalin
5. Leucine encephalin
(50 mg/mL each)

Analysis of Oligonucleotides



Conditions

Column	: InertSustainBio C18 (1.9 µm, 100 × 2.1 mm I.D)
Eluent	: A) 0.1 % Triethylamine in H_2O (pH 6.3, CH_3COOH) B) Eluent A/CH_3CN = 50/50, v/v A/B = 83/17 - 4 min - 80/20 - 0.1 min - 83/17 - 5.9 min - 83/17, v/v
Flow Rate	: 0.4 mL/min
Col. Temp.	: 40 ℃
Detection	: UV 260 nm
Injection Vol.	: 10 µL
Sample	: 1. 5' - GTT ACA GAA TCT GAC AAG CCT AAT ACG - 3' (27 mer) 2. 5' - GTT ACA GAA TCT GCC AAG CCT AAT ACG - 3' (27 mer) 3. 5' - GTT ACA GAA TCT GTC AAG CCT AAT ACG - 3' (27 mer) (300 pmol/L each)

Analytical Columns

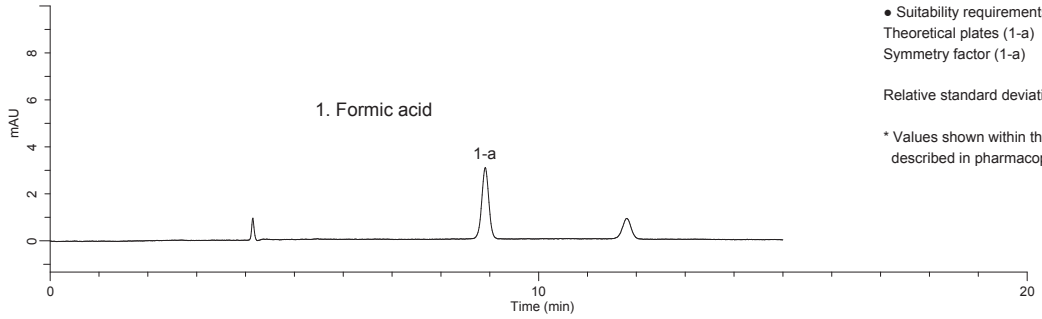
	Length \ I.D. (mm)	2.1	4.6
Particle Size: 1.9 µm	50	5020-89500	5020-87516
	100	5020-89501	5020-87517
	150	5020-89502	5020-87518
Particle Size: 3 µm	50	5020-89503	5020-87520
	100	5020-89504	5020-87521
	150	5020-89505	5020-87522
	250	5020-87519	5020-87523

InertSphere FA-1

- **Base Material : Styrene-Divinylbenzene Copolymer**
- **Particle Size : 9 µm**
- **Functional Group : Sulfonate**
- **Counter Ion : H^+**
- **USP Code : L17**

Povidone (polyvinylpyrrolidone, PVP) is used in the pharmaceutical industry as a synthetic polymer vehicle for dispersing and suspending drugs. It additionally acts as a disintegrant and tablet binder.
The revision to the harmonized standard for povidone has been approved and formic acid in povidone is now required to be measured.
The new InertSphere FA-1 columns are inspected using a standard solution of formic acid prior to shipment, which is the most appropriate column to be used in this new testing.

Formic Acid

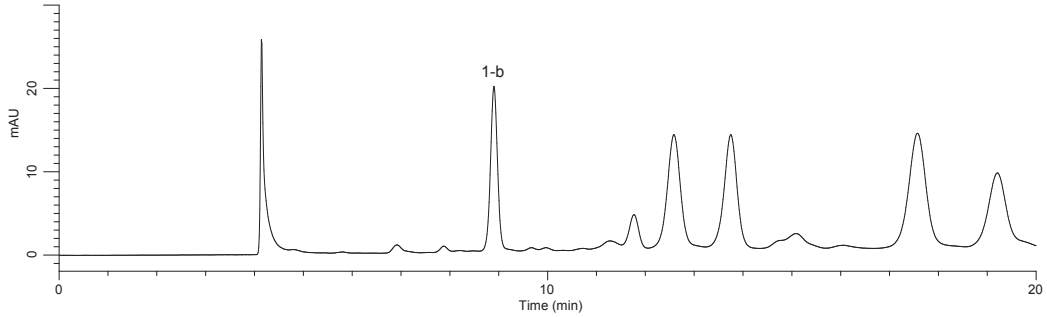


● Suitability requirements
Theoretical plates (1-a) : 17,902 (≧ 1,000)*
Symmetry factor (1-a) : (0.5 ≦)* 0.99(≦ 1.5)*

Relative standard deviation of peak area (1-a) (%)(n=6) : 0.61 (≦ 2.0)*

* Values shown within the brackets are the criteria described in pharmacopeia methods.

Povidone K15



Ordering Information

Particle Size (µm)	I.D. (mm)	Length (mm)	Cat.No.
9	7.8	300	5020-11003

Other Related Products

Glass Chromatography Column with Fritted Disc and PTFE Stopcock Plug

● Glass Chromatography Column with PTFE and Filter
8 mm I.D. x 200 mm Length
Cat.No. : 6010-23200

For Povidone, Purity Test, Sample Preparation, Packing Material

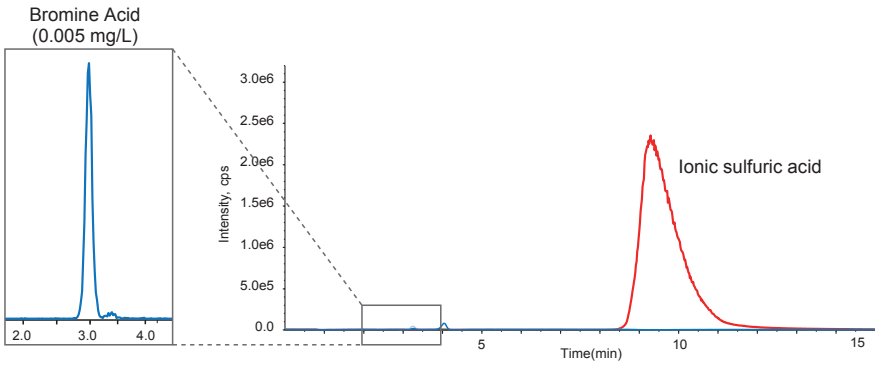
● Packing Material for Glass Chromatography Column
Strong acid ion-exchange resin
MCI GEL CK08P 100 mL
Particle Size : 75 - 150 µm
Counter ion : H^+
Cat.No. : 5055-79540

SYPRON AX-1

- **Base Material : Methacrylate Polymer**
- **Particle Size : 5 µm**
- **Functional Group : Quaternary Ammonium**
- **pH Range : 2 - 12**
- **Recommended operating pH range : 3 - 7**

SYPRON AX-1 is a cation exchange column with quaternary ammonium bonded to hydrophilic polymer. As it's designed to maximize the performance of LC/ MS, it improves separation and efficiency especially of bromate in tap water analysis.

Analysis of Bromine in Tap Water



Conditions

Column Size	: SYPRON AX-1(5 µm, 100 × 2.1 mm I.D.)
Eluent	: A) 25 mM CH_3COONH_4 in H_2O
	B) CH_3CN
	A/B=70/30, v/v
Flow Rate	: 0.2 mL/min
Injection Vol.	: 10 µL
Col. Temp.	: 40 °C
Detection	: LC/MS/MS (ESI, Negative, SRM)

Analytical Columns

Particle size	I.D. (mm)	Length (mm)	Cat.No.
5 µm	2.1	100	5020-11002

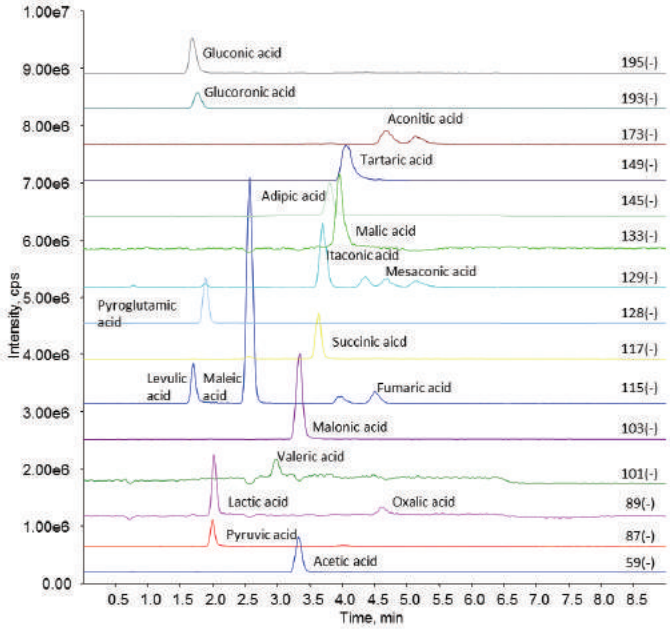
Cartridge Guard Column E

Item	I.D. (mm)	Length (mm)	Cat.No.
SYPRON AX-1 Replacement Cartridge (2 pcs)	2.1	100	5020-08641
SYPRON Guard Holder	–	–	5020-08640

SYPRON AX-2

- **Base Material** : **Methacrylate Polymer**
- **Particle Size** : **5 µm**
- **Functional Group** : **Quaternary Ammonium**
- **pH Range** : **2 - 12**
- **Recommended Operation pH Range** : **3 - 7**

SYPRON AX-2 column provides good performance on salt gradient analysis using anion exchange mode with mass chromatography. SYPRON AX-2, is suitable column for organic acid analysis and is able to use with rapid column equilibration time in salt gradient method. As SYPRON AX-2 is an ion exchange column, dicarboxylic acid generally shows weakly retention under reversed phase mode or ion exclusion chromatography, but it can be enhanced strongly using SYPRON AX-2 column.



Conditions

Column : SYPRON AX-2
(5 µm, 150 x 2.1 mm I.D.)
Eluent : A) H_2O/CH_3CN=50/50, v/v
B) 100 mM $HCOONH_4$
in H_2O/CH_3CN=50/50,v/v
A/B = 90/10 – 5 min – 50/50
– 0.1 min – 90/10, v/v
(total 9 min)
Flow Rate : 0.4 mL/min
Col. Temp. : 40 °C
Detection : LC/MS (ESI, Negative, SRM)
Injection : 10 µL

Particle size	I.D. (mm)	Length (mm)	Material (Watted Part)	Cat. No.
5 µm	2.1	100	PEEK	5020-11006
		150	PEEK	5020-11007

InertSphere Sugar-1

- **Base Material : Styrene Divinylbenzene Copolymer**
- **Particle size : 5 µm**
- **Exchange capacity : 0.7 meq/g**
- **Organic solvent resist : 0 - 100 % (Methanol only)**
- **Functional Group : Quaternary Alkylamine**
- **pH Range : 2 - 14**

InertSphere Sugar-1 is a suitable anion-exchange column for sugar analysis. It is packed quaternary ammonium group binding polymer. High sensitivity sugar analysis is available using an electrochemical detector ED723. Especially InertSphere Sugar-1 is suitable for Monosaccharide and Disaccharide analysis.
Note ; Solvent Bottle with CO_2 Trap Cartridge is necessary for analysis to avoid dissolving carbonate ion in the solvent. The Solvent Bottle CO_2 Trap Cartridge contains hazardous material which requires special freight handling. Additional charges apply.

Analytical Column

Particle Size: 5µm	Length (mm)	I.D. (mm)	Cat.No.
	150	4.6	5020-11001

Cartridge Guard Column E

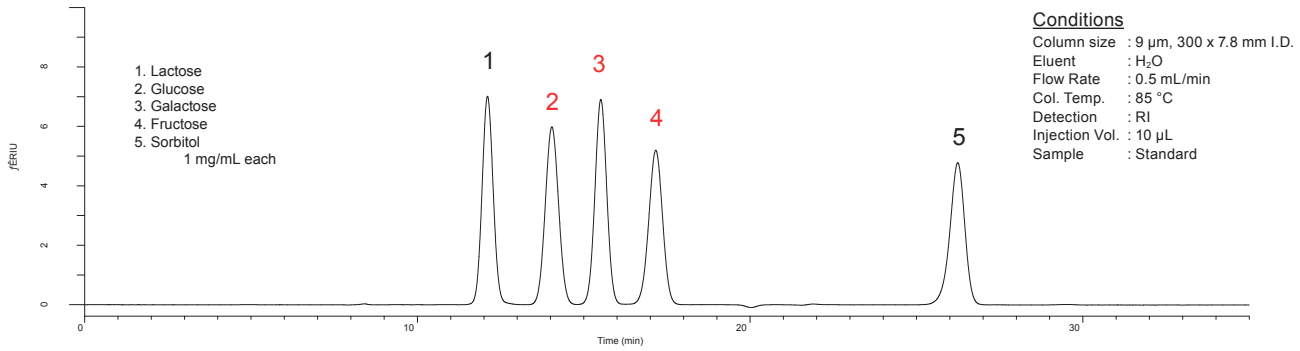
I.D. of the Analytical Column Applicable (mm)	Length (mm)	I.D. (mm)	Replacement Cartridge E Guard Column (2 pcs)	Cartridge E Holder / Cartridge Set (2 Cartridge E Guard Columns & 1 Holder)
			Cat.No.	Cat.No.
4.6	10	4.0	5020-19048	5020-19098

InertSphere Sugar-2

- **Base Material : Styrene-divinyl Polymer**
- **Particle Size : 9 µm**
- **Functional Group : Sulfo**
- **Counter Ion : Ca^{2+}**
- **Carbon Load : 8 %**
- **USP Code : L19**

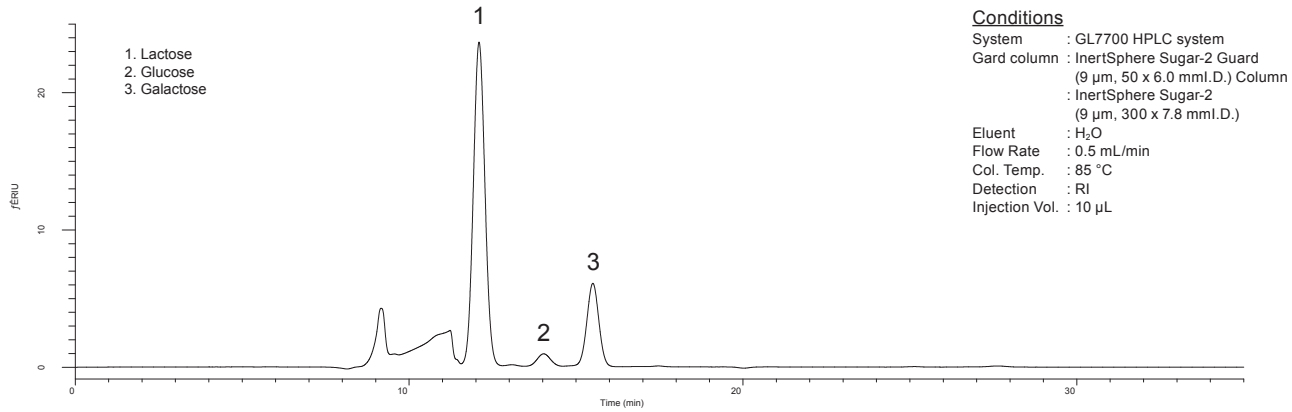
InertSpherer Sugar-2 is a column for analysis sugar, it packed with Ca^{2+} loaded resin.
The column mainly is used for Size Exclusion Chromatography (SEC) mode, the elution order is from big molecular weight to small. At the same time, the ligand exchange mode employs ion interaction between metal ions and hydroxyl groups form a complex with the counter ion. Especially this mode is effective for analysis sugar-alcohol. 100% water can be used as eluent, there is no need to prepare mix solvent.

Figure 1 : Sugar (Standard Solution)



InertSphere Sugar-2 separate Glucose, Galactose and Sorbitol which are difficult to be separated by NH_2 columns.

Figure 2 : Analysis of Plain Yogurt



Analytical Column

Particle Size (µm)	Column I.D. (mm)	Column Length (mm)	Cat. No.
9	7.8	300	5020-11000

Guard Column

Particle Size (µm)	Column I.D. (mm)	Column Length (mm)	Cat. No.
9	6	50	5020-10999

Application Specific Columns

Inertsil Peptides C18

- **Base Material : 3 Series High Purity Silica Gel**
- **Particle Size : 4 µm**
- **Surface Area : 450 m^2/g**
- **Pore Size : 100 Å (10 nm)**
- **Pore Volume : 1.05 mL/g**
- **Functional Group : Octadecyl**
- **End-capping : Yes**
- **Carbon Loading : 15 %**
- **USP Code : L1**
- **pH Range : 2 - 7.5**

The whole manufacturing process; synthesis of silica gel, chemical modification, packing, quality test, is under the strict quality control. The number of theoretical plates is as many as 100,000 plates/m.
For peptide mapping, analytical result of standard peptides obtained by each lot is attached to the column. For protein analysis, Inertsil WP300 or Inertsil WP300 C8 is recommended.

Analytical Columns

	Length \ I.D. (mm)	1.0	1.5		
Particle Size: 4 µm	50	5020-08002	5020-08012		
	100	5020-08004	5020-08014		
	150	5020-08005	5020-08015		
	250	5020-08006	5020-08016		
	Length \ I.D. (mm)	2.1	3.0	4.0	4.6
	50	5020-08022	5020-08032	5020-08042	5020-08052
	100	5020-08024	5020-08034	5020-08044	5020-08054
	150	5020-08025	5020-08035	5020-08045	5020-08055
	250	5020-08026	5020-08036	5020-08046	5020-08056

Cartridge Guard Column E

I.D. of the Analytical Column Applicable (mm)	Length (mm)	I.D. (mm)	Replacement Cartridge E Guard Column (2 pcs)	Cartridge E Holder / Cartridge Set (2 Cartridge E Guard Columns & 1 Holder)
			Particle Size	Particle Size
			4 µm	4 µm
1.0	10	1.0	5020-19211	5020-19261
1.5, 2.1		1.5	5020-19311	5020-19361
2.1, 3.0		3.0	5020-19111	5020-19161
4.0, 4.6		4.0	5020-19011	5020-19061
2.1, 3.0	20	3.0	5020-19511	5020-19561
4.0, 4.6		4.0	5020-19411	5020-19461
Holder for Cartridge Guard Column E			For 10 mm Length	5020-08500
			For 20 mm Length	5020-08550

Inertsil Acrolein C18

- **Base Material : 3 Series High Purity Silica Gel**
- **Particle Size : 5 µm**
- **Surface Area : 450 m^2/g**
- **Pore Size : 100 Å (10 nm)**
- **Pore Volume : 1.05 mL/g**
- **Functional Group : Octadecyl**
- **End-capping : Yes**
- **Carbon Loading : 9 %**
- **USP Code : L1**
- **pH Range : 2~7.5**

Inertsil Acrolein offers rapid separation of DNPH-Acetone and DNPH-Acrolein under a general mobile phase condition such as acetonitrile / water.

Analytical Columns

	Length (mm)	I.D. (mm)	Cat.No.
Particle Size: 5 µm	250	4.6	5020-18051

Inertsil Sulfa C18

- **Base Material : 3 Series High Purity Silica Gel**
- **Particle Size : 3 µm, 5 µm**
- **Surface Area : 450 m²/g**
- **Pore Size : 100 Å (10 nm)**
- **Pore Volume : 1.05 mL/g**
- **Functional Group : Octadecyl**
- **End-capping : Yes**
- **Carbon Loading : 15 %**
- **USP Code : L1**

As drug residues in food has became a major problem today, developing analytical methods of synthetic bacterial drugs including Sulfa drugs is important. Inertsil Sulfa C18 is a superb ODS column designed for analysis of sulfa drugs.
Each lot of Inertsil Sulfa C18 is tested for the effective separation of sulfa drugs and will be delivered to you with its annalistic data.

Analytical Columns

	Length \ I.D. (mm)	2.1	3.0	4.0	4.6
Particle Size: 3 µm	100	5020-07504	5020-07514	5020-07524	5020-07534
	150	5020-07505	5020-07515	5020-07525	5020-07535
Particle Size: 5 µm	Length \ I.D. (mm)	2.1	3.0	4.0	4.6
	150	5020-07545	5020-07555	5020-07565	5020-07575
	250	5020-07546	5020-07556	5020-07566	5020-07576

Cartridge Guard Column E

I.D. of the Analytical Column Applicable (mm)	Length (mm)	I.D. (mm)	Replacement Cartridge E Guard Column (2 pcs)		Cartridge E Holder / Cartridge Set (2 Cartridge E Guard Columns & 1 Holder)	
			Particle Size		Particle Size	
			3 µm	5 µm	3 µm	5 µm
2.1, 3.0	10	3.0	5020-19113	5020-19112	5020-19163	5020-19162
4.0, 4.6		4.0	5020-19013	5020-19012	5020-19063	5020-19062
2.1, 3.0	20	3.0	5020-19513	5020-19512	5020-19563	5020-19562
4.0, 4.6		4.0	5020-19413	5020-19412	5020-19463	5020-19462
Holder for Cartridge Guard Column E				For 10 mm Length		5020-08500
				For 20 mm Length		5020-08550

Inertsil AS

- **Base Material : 3 Series High Purity Silica Gel**
- **Particle Size : 5 µm**
- **Surface Area : 450 m²/g**
- **Pore Size : 100 Å (10 nm)**
- **Pore Volume : 1.05 mL/g**
- **Functional Group : Octadecyl**
- **End-capping : Yes**
- **Carbon Loading : 15 %**
- **USP Code : L1**

Inertsil AS is for analysis of arsenic compounds which are toxic compounds exists in environment water. As an arsenic speciation analysis column, simultaneous analysis of arsenic compounds is available with HPLC/ICP-MS.

Analytical Columns

	Length \ I.D. (mm)	2.1
Particle Size: 3 µm	150	5020-18030
	250	5020-18032

Cartridge Guard Column E

I.D. of the Analytical Column Applicable (mm)	Length (mm)	I.D. (mm)	Replacement Cartridge E Guard Column (2 pcs)	Cartridge E Holder / Cartridge Set (2 Cartridge E Guard Columns & 1 Holder)
			Cat.No.	Cat.No.
2.1	10	1.5	5020-18031	5020-18035
4.6		4.0	5020-18041	5020-18045
Holder for Cartridge Guard Column E			For 10 mm Length	5020-08500

Corresponding to Pharmacopeia (JP, USP, EP) Columns

GL Sciences offers varies particle sizes and lengths corresponding to Japanese Pharmacopeias (JP), US Pharmacopeias (USP) or European Pharmacopeias (EP).

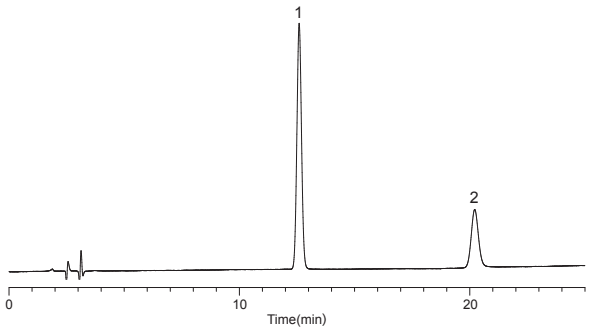
3 µm Particle Size HPLC Columns

Packing Material	I.D. (mm)	Length (mm)	Description	Cat. No.
C18 (ODS)	2.1	50	Inertsil WP300 C18	5020-41100
		150	Inertsil WP300 C18	5020-41101
	3.0	150	Inertsil WP300 C18	5020-41102
	3.9	100	Inertsil ODS-3	5020-89604
		100	Inertsil ODS-4	5020-89605
	4.6	33	Inertsil ODS-SP	5020-87035
		50	Inertsil WP300 C18	5020-41103
		150	Inertsil WP300 C18	5020-41104
		250	Inertsil WP300 C18	5020-41105
SIL	2.1	100	Inertsil WP300 SIL	5020-87047

5 µm Particle Size HPLC Columns

Packing Material	I.D. (mm)	Length (mm)	Description	Cat. No.
C18 (ODS)	3.9	150	InertSustain C18	5020-87030
			Inertsil ODS-4	5020-87023
			Inertsil ODS-3	5020-87008
			Inertsil WP300 C18	5020-87045
		300	InertSustain C18	5020-87031
			Inertsil ODS-4	5020-87024
			Inertsil ODS-3	5020-87009
	4.0	100	Inertsil ODS-2	5020-01120
		125	Inertsil ODS-SP	5020-87043
			Inertsil WP300 C18	5020-87037
		300	InertSustain C18	5020-87032
			Inertsil ODS-4	5020-87025
			Inertsil ODS-3	5020-87010
	4.6	300	InertSustain C18	5020-87033
			Inertsil ODS-4	5020-87026
			Inertsil ODS-3	5020-87011
	6.0	300	InertSustain C18	5020-89603
			Inertsil ODS-4	5020-89609
C8	3.0	60	Inertsil C8	5020-87000
	3.9	150	InertSustain C8	5020-87028
			Inertsil C8-4	5020-87021
			Inertsil C8-3	5020-87005
	4.0	80	Inertsil C8-4	5020-87022
Phenyl	3.0	100	Inertsil Ph	5020-89601
NH_2	4.6	125	Inertsil NH2	5020-89602
Pre-column	4.0	25	InertSustain C18	5020-03399
			InertSustain C8	5020-87040

Figure 1 : Crospovidone



Conditions

Column	: InertSustain C18 (5 µm, 250 × 4.0 mm I.D.)
Guard Column	: InertSustain C18 (5 µm, 25 × 4.0 mm I.D.)
Eluent	: A) CH_3CN
	B) H_2O
	A/B = 1/9, v/v
Flow Rate	: 1.0 mL/min
Col. Temp.	: 40 °C
Detection	: UV 235 nm
Injection Vol.	: 50 µL

Sample :
1. 1-vinyl-2-pyrrolidone
2. Vinyl acetate

7 µm Particle Size HPLC Columns

Packing Material	I.D. (mm)	Length (mm)	Description	Cat. No.
C18 (ODS)	4.0	250	Inertsil ODS-3	5020-87012
		300	Inertsil ODS-3	5020-87013
	4.6	120	Inertsil ODS-3	5020-87041
		125	Inertsil ODS-3	5020-87038
		250	Inertsil ODS-3	5020-87014
		300	Inertsil ODS-3	5020-87015
NH_2	4.6	125	Inertsil NH2	5020-87044

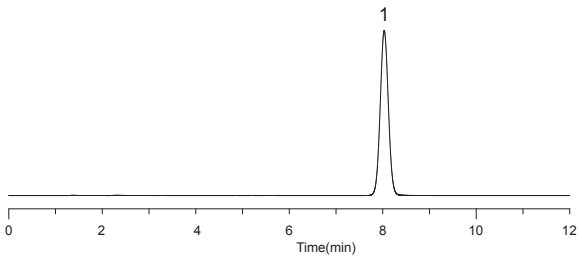
10 µm Particle Size HPLC Columns

Packing Material	I.D. (mm)	Length (mm)	Description	Cat. No.
C18 (ODS)	3.9	300	Inertsil ODS-3	5020-87016
			Inertsil ODS	5020-87002
	4.0	150	Inertsil ODS-3	5020-87017
		250	Inertsil ODS-3	5020-87018
		300	Inertsil ODS-3	5020-87019
			Inertsil ODS	5020-87003
	4.6	300	Inertsil ODS-3	5020-87020
			Inertsil ODS	5020-87004

Other Particle Size HPLC Columns

Particle Size	I.D. (mm)	Length (mm)	Description	Cat. No.
3.5 µm	3.0	150	Inertsil WP300 C18	5020-87034
	4.6	100	Inertsil C8-3	5020-87042
4 µm	3.9	150	Inertsil WP300 C18	5020-89606
	4.0	150	Inertsil WP300 C18	5020-89607
	4.6	150	Inertsil ODS-4	5020-89608

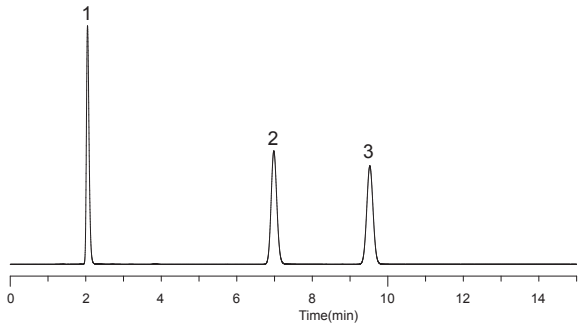
Figure 2: Voriconazole



Conditions

Column : Inertsil WP300 C18 (4 µm, 150 × 3.9 mm I.D.)
Eluent : A) CH_3CN B) CH_3OH C) Buffer*
A/B/C = 15/30/55, v/v/v
Flow Rate : 1.06 mL/min
Col. Temp. : 35 °C
Detection : UV 256 nm
Injection Vol. : 20 µL
Sample : 1. Voriconazole (25 mg/L)
*Dissolve 1.9 g of ammonium formate in 1000 mL of water.
Adjust pH 4.0 by formic acid.

Figure 3: Candesartan • Hydrochlorothiazide



Conditions

Column : Inertsil ODS-4 (4 µm, 150 × 4.6 mm I.D.)
Eluent : A) CH_3CN B) Buffer* A/B = 11/9, v/v
Flow Rate : 0.98 mL/min
Col. Temp. : 25 °C
Detection : UV 254 nm
Injection Vol. : 10 µL

Sample:
1. Hydrochlorothiazide (62 mg/L)
2. Candesartan cilexetil (40 mg/L)
3. Benzophenone (10 mg/L)

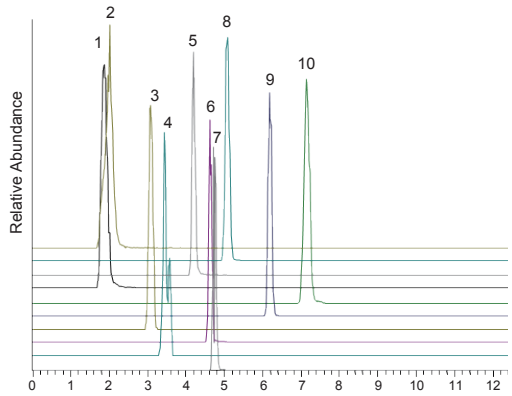
*Dissolve 7.80 g of sodium dihydrogenphosphate dihydrate in 900 mL of water.
Adjust pH 5.5 by sodium hydroxide.
Add water to make 1,000 mL.

Corresponding SFC

Mainly supercritical CO_2 is used as mobile phase in SFC (Supercritical Fluid Chromatography). It is said suitable for high speed analysis because of lower viscosity than the general HPLC mobile phase and fast diffusion speed is fast in mobile phase. It is exceptional method for preparative and purification purpose because almost mobile phase is volatilized when back to normal pressure.
InertSustain and Inertsil series columns are available for SFC analysis.
The packing materials are the same as HPLC columns but they are packed in stainless tubes which correspond to SFC.
Various packing materials are available, and then utilize for expand the SFC application range.

Example of SFC/MS Analysis

Ten(10) kinds of pesticides are analyzed with Inertsil ODS-EP which contains a polar group embedded between the silica surface and Octadecyl group (C18) as the below. The separation patterns are different from polar group chemical bonded column like mainly used on SFC.



Conditions

Column Size	: Inertsil ODS-EP (5 µm, 250 × 4.6 mm I.D.)
Eluent	: A) Supercritical carbon dioxide
	B) 0.1 % ammonium formate in methanol
	A/B = 95/5 - 1 min - 95/5 - 2 min - 90/10 -10 min - 80/20
Flow Rate	: 3 mL/min
Col. Temp.	: 35 °C
Injection vol.	: 5 mL
Back Pressure	: 10 MPa (100 bar)

Sample:

1. Methamidophos
2. Acetamiprid
3. Carbendazim
4. Dimethirimol
5. Emamectin benzoate (B1a)
6. Chlorfluazuron
7. Acequinocyl
8. Pyridaben
9. Cypermethrin
10. Etofenprox

This data is provided by Prof. Dr. Bamba, Osaka Univercity.

About packing materials

InertSustain and Inertsil series are available. Contact us for the details.

* Inspected with HPLC only, not with SFC.

Sizes

The following four(4) sizes are available as standard SFC columns.
Please describe the packing materials when you order.

Description	Cat.No.
Corresponding SFC column 5 µm, 2.1 × 150 mm	5020-01007
Corresponding SFC column 5 µm, 4.6 × 150 mm	5020-01005
Corresponding SFC column 5 µm, 4.6 × 250 mm	5020-01006
Corresponding SFC column 5 µm, 10 × 250 mm	5020-01008
Corresponding SFC column 5 µm, 20 × 250 mm	5020-01009

* Maximum operating column pressures are 28 MPa (280 bar) on 2.1 × 150 mm and 25 MPa (250 bar) on 4.6 × 250 mm.