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MZ ANALYSENTECHNIK

HPLC Columns
GPC/SEC Columns
Accessories

2020

Includes complete USP <621> listing
+ compatible HPLC-packings

Since 1986 in Duty for Separation Sciences & Technology

Dear Customer,

MZ-Analysentechnik GmbH was founded in 1986 and ever since, we are active in the field of research and development of bulk media and columns for High Performance Liquid Chromatography (HPLC) and Gel-Permeation Chromatography (GPC) / Size Exclusion Chromatography (SEC). Our goal is to provide our customers with LC-columns of the highest level of quality - by reasonable pricing.

Especially for narrow-bore HPLC and GPC we have developed highly efficient micro- and narrow-bore-columns, which are the actual state-of-the-art - saving up to 70% eluent.

The continuously positive feedback from users worldwide about our products and services is both acknowledgement and obligation. More than 50 % of our sales is going abroad. Therefore we promise to keep our path of producing high quality LC-Columns - always with the needs of our customers in mind.

In addition to our well established series of columns for environmental analysis (**MZ-PAH & MZ-PBM**), we recently expanded our own programme, covering the full range of chromatographers needs with highly competitive packing media:

- **Orbit™**
- **PerfectBond™**
- **PerfectSil™**
- **PerfectSil™ Target**
- **MZ-AquaPerfect**
- **PerfectChrom™**
- **PerfectSil™ 300**
- **PerfectSil™ Target HD**

Directly from the start we are able to offer a large variety of modifications to fulfill the needs of most chromatographic tasks at reasonable prices. With the help of this brochure we like to introduce these high quality products to you. Furthermore we´d like to help you in the process of choosing the right column for implementig any LC-based method mentioned in USP. In this brochure you will find compatible HPLC-columns for any stationary phase material mentioned in USP Chapter <621>.

... just in case you need a column not listed here: simply ask us if we can help you.

Product Range page 4

HPLC-columns

Accessories

GPC-/SEC-Columns

USP <621> - list + compatible packings

MZ ANALYSENTECHNIK

SURVEY PRODUCT RANGE

MZ-Analysentechnik: Developments and Trademarks

- PerfectSil® Target
- PerfectChrom®
- PerfectBond®
- PerfectSil®
- MZ-AquaPerfect
- MZ-PAH
- MZ-PBM
- Orbit
- MZ-Gel SD*plus*
- MZ Super-FG

Manufacturing of HPLC-Columns: Available Packings

- MZ-AquaPerfect®
- PerfectSil®
- PerfectChrom®
- PerfectBond®
- PerfectSil® Target
- Orbit®
- Hypersil®
- Inertsil®
- Kromasil®
- LiChrosorb®
- LiChrospher®
- Nucleosil®
- Superspher®
- µBondapak®
- Spherisorb®
- Zorbax®

Product Range HPLC-Products - Sales & Service

Nouryon eka
Kromasil® Classic · Kromasil® Eternity
Kromasil® Chiral · Kromasil® SFC

SCAS Sumika Chemical Analysis Service, Ltd.
Sumichiral® · Sumipax®

RESTEK Freude an Chromatografie
Raptor® · Ultra® · Allure® · Rtx® · Rxi® · Pinnacle® · Viva® · Stabilwax®

MITSUBISHI CHEMICAL
MCI Gel® · SEPABEADS®

ChromaNik Technologies Inc.
Sunniest® · SunShell® · Sunrise® · SunArmor®

advancedmaterialstechnology
HALO® HALO 5

GL Sciences Inc.
Inertsil® · Titansphere® · Bioptic® · InertSustain®

Daicel
Chiralcel® · Chiralpak® · Chromopak® · Crownpak®

Imtakt
Unison® · Cadenza® · Scherzo® · Intrada®

SHISEIDO
Capcell® · Proteonavi® · Ceramospher® · Sucrebead®

SHINWA CHEMICAL INDUSTRIES
Ultron™ ES-OVM / -PEPSIN

Advanced Chromatography Technologies
Ace AQ® · Ace C18-HL® · Ace Capillary® · Ace C18-AR®

MERCK
LiChrospher® · LiChrosorb® · Purospher® · Chromolith® · ZIC®-pHILIC · ZIC®-HILIC

ES INDUSTRIES
Chromegabond® · Aquasep® · FluoroSep® (Perfluorophenyl)

SGE Analytical Science
ProteCol® · PEEKSil® · eVol®

MACHEREY-NAGEL
Nucleosil® · NucleoDur®

MEGA
Ultra-FAST® · MEGA-DEX® · Heliflex AT® · Econo-Cap EC®

United Chemical Technologies
Selectra® Columns · Quick QuEChERS®

Waters
µBondapak® · Acquity® · Xbridge® · Proteinpak® · Symmetry®

HiChrom
Partisil® · PartiSphere® · Beckmann Ultrasphere®

Thermo Scientific
Hypersil® Gold · Hypercarb® · Syncronis® · BioBasic® · BDS®

SIGMA-ALDRICH
Supelcosil® · Discovery® · Astec®

sepax
Antibodix® · Proteomix® · Zenix® · SRT® · Carbomix®

S*PURE
Etract-Clean® · GacePure® · SECLute® · UltraClean®

Extended Product Range - Sales Only

Agilent Technologies Zorbax® • Accubond® • Evidex® • GC-Products • LC-Accessories

Restek GC-Columns ...
Hamilton LC-Product range • LC-Syringes

Perkin Elmer Brownlee®
Mitsubishi Chemical MCI™ Gel® • Diaion® • Sepabeads®

Accessories + Consumables

MZ-Analysentechnik delivers quick and reliably all kind of accessories for LC and GC. We handpick our suppliers for best quality at reasonable prices

JOUR RESEARCH
EXMIRE
RESTEK Freude an Chromatografie
IDEX HEALTH & SCIENCE

HPLC-Columns: Order Information

Column Dimensions Available

Narrow-bore		Analytical		Semi-Prep & Prep
		20 x 4.0 mm	20 x 4.6 mm	any standard-dimension
		33 x 4.0 mm	33 x 4.6 mm	available from
		40 x 4.0 mm	40 x 4.6 mm	8-40 mm ID
50 x 2.1 mm	50 x 3.0 mm	50 x 4.0 mm	50 x 4.6 mm	please ask
		60 x 4.0 mm	60 x 4.6 mm	
		75 x 4.0 mm	75 x 4.6 mm	
100 x 2.1 mm	100 x 3.0 mm	100 x 4.0 mm	100 x 4.6 mm	
125 x 2.1 mm	125 x 3.0 mm	125 x 4.0 mm	125 x 4.6 mm	
150 x 2.1 mm	150 x 3.0 mm	150 x 4.0 mm	150 x 4.6 mm	
200 x 2.1 mm	200 x 3.0 mm	200 x 4.0 mm	200 x 4.6 mm	
250 x 2.1 mm	250 x 3.0 mm	250 x 4.0 mm	250 x 4.6 mm	
		300 x 4.0 mm	300 x 4.6 mm	

Part Numbers HPLC-Columns

Please check the followoing pages for materialcode & price group of the desired packing media. The part-no. for ordering is a combination of materialcode and column dimension as follows:

MZ CODE – LEN IDØ

four-digit Materialcode | length in mm | ID in 1/10 mm

Example: PerfectSil 120 ODS-2 5 µm
(Materialcode **1425** / Price-Group D)
HPLC-Column **250** x **4.0** mm
=> Part-No.: MZ1425-250040

Guard Columns & Cartridges: Order Information

Guard Cartriges

MZ-guard cartridges for analytical/narrow-bore HPLC-columns are available in dimensions with 3 different lengths and 4 different ID´s. Please check below for suitable cartridge holders.

Guard cartridges (pack of 5 pieces)
ID: 2,1 mm, 3,0 mm, 4,0 mm und 4,6 mm
Length: 5 mm, 10 mm und 20 mm

The part number is generated by combining column-dimension and material-code according to the following scheme:

MZ CODE – VK LE ID

four-digit Materialcode | length in mm | ID in 1/10mm

Example: guard cartridges (5 pcs.)
Inertsil ODS-2 5 µm (Materialcode **2010**)
Dimension **20** x **4.0** mm (LxID)
=> Part-No.: MZ2010-VK2040

Cartridge Holder Analytical/Narrow-Bore — Art. No.

suitable for MZ-columns ID 2.1, 3.0, 4.0 & 4.6 mm

cartridge holder **integrated** suitable for cartridges of 20 & 10 mm length) — VI 74000
cartridge holder **integrated** suitable for cartridges of 5 mm length) — VI 74005

free standing cartridge holder **for standard fitting** (suitable for cartridges of 20 mm length) — FG 71020

free standing cartridge holder **for standard fitting** (suitable for cartridges of 10 mm length) — FG 71010

free standing cartridge holder **for standard fitting** (suitable for cartridges of 5 mm length) — FG 71005

HPLC Columns

Guard Columns

Available HPLC-Packings

Available HPLC-Packings

April 2020

In addition to HPLC-Columns for analytical purposes we pack columns in prep- and semi-prep dimensions with 8 - 50 mm ID. All preparative columns are individually manufactured to meet the same quality standards as analytical columns as for each packing media we use an especially optimized packing protocol.

Please ask for a quotation - we offer very competitive prices.

Hypersil™ — Thermo Scientific

spherical • 120 Å / 170 m^2g^{-1} (BDS C18 130 Å)

	size	ec	carbon-content	USP	code	price-group
Hypersil SAS C1	3 µm	-	2.5 %	L13	**6023**	**G**
Hypersil SAS C1	5 µm	-	2.5 %	L13	**6025**	**E2**
Hypersil SAS C1	10 µm	-	2.5 %	L13	**6020**	**E2**
Hypersil MOS C8	3 µm	-	6.5 %	L7	**6033**	**G**
Hypersil MOS C8	5 µm	-	6.5 %	L7	**6035**	**E2**
Hypersil ODS C18	3 µm	+	10 %	L1	**6043**	**G**
Hypersil ODS C18	5 µm	+	10 %	L1	**6045**	**E2**
Hypersil ODS C18	10 µm	+	10 %	L1	**6040**	**E2**
Hypersil CPS -CN	5 µm	-	4 %	L10	**6055**	**E2**
Hypersil CPS -CN	10 µm	-	4 %	L10	**6050**	**E2**
Hypersil APS -NH2	3 µm	-	1.9 %	L8	**6063**	**G**
Hypersil APS -NH2	5 µm	-	1.9 %	L8	**6065**	**E2**
Hypersil APS-2	3 µm	-	1.9 %	L8	**6083**	**G**
Hypersil APS-2	5 µm	-	1.9 %	L8	**6085**	**E2**
Hypersil APS-2	10 µm	-	1.9 %	L8	**6080**	**E2**
Hypersil -Phenyl	5 µm	-	5 %	L11	**6075**	**E2**
Hypersil BDS C18	5 µm	+	11 %	L1	**6195**	**G**

check our special brochure "Thermo" with the complete range of columns by Thermo Scientific

LiChrosorb™ — Merck / EMD

irregularly shaped • 60 Å / 550 m^2g^{-1} • 100 Å / 300 m^2g^{-1}

LiChrosorb Si 60	5 µm	-	-	L3	**0015**	**E2**
LiChrosorb Si 60	7 µm	-	-	L3	**0017**	**E2**
LiChrosorb Si 60	10 µm	-	-	L3	**0010**	**E2**
LiChrosorb Si 100	5 µm	-	-	L3	**0025**	**E2**
LiChrosorb Si 100	7 µm	-	-	L3	**0027**	**E2**
LiChrosorb Si 100	10 µm	-	-	L3	**0020**	**E2**
LiChrosorb RP-8	5 µm	-	9.5 %	L7	**0045**	**E2**
LiChrosorb RP-8	7 µm	-	9.5 %	L7	**0047**	**E2**
LiChrosorb RP-8	10 µm	-	9.5 %	L7	**0040**	**E2**
LiChrosorb RP-18	5 µm	-	17 %	L1	**0055**	**E2**
LiChrosorb RP-18	7 µm	-	17 %	L1	**0057**	**E2**
LiChrosorb RP-18	10 µm	-	17 %	L1	**0050**	**E2**
LiChrosorb-NH2	5 µm	-	4 %	L8	**0065**	**E2**
LiChrosorb-NH2	7 µm	-	4 %	L8	**0067**	**E2**
LiChrosorb-NH2	10 µm	-	4 %	L8	**0060**	**E2**
LiChrosorb-CN	5 µm	-	7 %	L10	**0075**	**E2**
LiChrosorb-CN	7 µm	-	7 %	L10	**0077**	**E2**
LiChrosorb-CN	10 µm	-	7 %	L10	**0070**	**E2**
LiChrosorb DIOL	5 µm	-	8 %	L20	**0085**	**E2**
LiChrosorb DIOL	7 µm	-	8 %	L20	**0087**	**E2**
LiChrosorb DIOL	10 µm	-	8 %	L20	**0080**	**E2**

µBondapak™ — Waters

irregularly shaped • 125 Å / 300 m^2g^{-1}

	size	ec	carbon-content	USP	code	price-group
µBondapak C18	10 µm	-	10.0 %	L1	**8100**	**G**

Inertsil™ — GL-Sciences

spherical • 150 Å / 320 m^2g^{-1} • 100 Å / 450 m^2g^{-1}

Inertsil 150 Å ODS-2	5 µm	+	18,5 %	L1	**2010**	**F**
Inertsil 100 Å ODS-3	5 µm	+	15 %	L1	**2050**	**F**
Inertsil 150 Å C8	5 µm	+	10,5 %	L7	**2030**	**F**
Inertsil 150 Å C4	5 µm	+	7,5 %	L26	**2035**	**F**
Inertsil Phenyl	5 µm		10 %	L11	**2040**	**F**

check our special brochure "INERTSIL" with the complete range of columns packed by GL Sciences

Kromasil™ — Eka Nobel

spherical • 80 Å / 540 m^2g^{-1} • 110 Å / 320 m^2g^{-1}

Kromasil 60 SIL	3.5 µm	-	-	L3	**0500**	**F**
Kromasil 60 SIL	5 µm	-	-	L3	**0501**	**E**
Kromasil 60 SIL	7 µm	-	-	L3	**0502**	**E**
Kromasil 60 SIL	10 µm	-	-	L3	**0503**	**E**
Kromasil 60 SIL	13 µm	-	-		**0504**	**E**
Kromasil 60 SIL	16 µm	-	-		**0505**	**E**
Kromasil 100 SIL	3.5 µm	-	-	L3	**0510**	**F**
Kromasil 100 SIL	5 µm	-	-	L3	**0511**	**E**
Kromasil 100 SIL	7 µm	-	-	L3	**0512**	**E**
Kromasil 100 SIL	10 µm	-	-	L3	**0513**	**E**
Kromasil 100 SIL	13 µm	-	-		**0514**	**E**
Kromasil 100 SIL	16 µm	-	-		**0515**	**E**
Kromasil 100 C1	5 µm	-	4.7 %	L13	**0521**	**E**
Kromasil 100 C1	7 µm	-	4.7 %	L13	**0522**	**E**
Kromasil 100 C1	10 µm	-	4.7 %	L13	**0523**	**E**
Kromasil 100 C1	13 µm	-	4.7 %		**0524**	**E**
Kromasil 100 C1	16 µm	-	4.7 %		**0525**	**E**
Kromasil 100 C4	3.5 µm	+	8.0 %	L26	**0530**	**F**
Kromasil 100 C4	5 µm	+	8.0 %	L26	**0531**	**E**
Kromasil 100 C4	7 µm	+	8.0 %	L26	**0532**	**E**
Kromasil 100 C4	10 µm	+	8.0 %	L26	**0533**	**E**
Kromasil 100 C4	13 µm	+	8.0 %		**0534**	**E**
Kromasil 100 C4	16 µm	+	8.0 %		**0535**	**E**
Kromasil 100 C8	3.5 µm	+	12.0 %	L7	**0540**	**F**
Kromasil 100 C8	5 µm	+	12.0 %	L7	**0541**	**E**
Kromasil 100 C8	7 µm	+	12.0 %	L7	**0542**	**E**
Kromasil 100 C8	10 µm	+	12.0 %	L7	**0543**	**E**
Kromasil 100 C8	13 µm	+	12.0 %		**0544**	**E**
Kromasil 100 C8	16 µm	+	12.0 %		**0545**	**E**
Kromasil 100 C18	3.5 µm	+	19.0 %	L1	**0550**	**F**
Kromasil 100 C18	5 µm	+	19.0 %	L1	**0551**	**E**
Kromasil 100 C18	7 µm	+	19.0 %	L1	**0552**	**E**
Kromasil 100 C18	10 µm	+	19.0 %	L1	**0553**	**E**
Kromasil 100 C18	13 µm	+	19.0 %		**0554**	**E**
Kromasil 100 C18	16 µm	+	19.0 %		**0555**	**E**
Kromasil 100 NH2	5 µm	+	1.5 %	L8	**0561**	**E**
Kromasil 100 NH2	7 µm	+	1.5 %	L8	**0562**	**E**
Kromasil 100 NH2	10 µm	+	1.5 %	L8	**0563**	**E**
Kromasil 100 NH2	13 µm	+	1.5 %		**0564**	**E**
Kromasil 100 NH2	16 µm	+	1.5 %		**0565**	**E**

Available HPLC-Packings

LiChrospher™ — Merck / EMD

spherical • 60 Å / 650 m^2g^{-1} • 100 Å / 420 m^2g^{-1}

LiChrospher Si 60	5 µm	-	-	L3	**0115**	F
LiChrospher Si 60	10 µm	-	-	L3	**0110**	F
LiChrospher Si 100	5 µm	-	-	L3	**0125**	F
LiChrospher Si 100	10 µm	-	-	L3	**0120**	F
LiChrospher 100RP-8	5 µm	-	12.5 %	L7	**0135**	F
LiChrospher 100RP-8	10 µm	-	12.5 %	L7	**0130**	F
... 100RP-8 endc.	5 µm	+	13.0 %	L7	**0136**	F
... 100RP-8 endc.	10 µm	+	13.0 %	L7	**0131**	F
... 100RP-18	5 µm	-	21.0 %	L1	**0145**	F
... 100RP-18	10 µm	-	21.0 %	L1	**0140**	F
... 100RP-18 endc.	5 µm	+	21.5 %	L1	**0146**	F
... 100RP-18 endc.	10 µm	+	21.5 %	L1	**0141**	F
LiChrospher 100-NH2	5 µm	-	4.6 %	L8	**0155**	F
LiChrospher 100-NH2	10 µm	-	4.6 %	L8	**0150**	F
LiChrospher 100-CN	5 µm	-	6.6 %	L10	**0165**	F
LiChrospher 100-CN	10 µm	-	6.6 %	L10	**0160**	F
LiChrospher 100 DIOL	5 µm	-	8.0 %	L20	**0175**	F
LiChrospher 100 DIOL	10 µm	-	8.0 %	L20	**0170**	F
... 60 RP-Select B	5 µm	+	11.5 %	L7	**0185**	F
... 60 RP-Select B	10 µm	+	11.5 %	L7	**0180**	F

MZ-Aqua Perfect™ — MZ-AT

spherical • 120 Å / 310 m^2g^{-1} • 200 Å / 220 m^2g^{-1}

MZ-Aqua Perfect C18	3 µm	+	15 %	L1	**0610**	F
MZ-Aqua Perfect C18	5 µm	+	15 %	L1	**0612**	D
MZ-Aqua Perfect C18	7 µm	+	15 %	L1	**0613**	D
MZ-Aqua Perfect C18	10 µm	+	15 %	L1	**0614**	D
... 200 C18	3 µm	+	11 %	L1	**0620**	F
... 200 C18	5 µm	+	11 %	L1	**0622**	D

Nucleosil™ 100 — Macherey-Nagel

spherical • 100 Å / 350 m^2g^{-1}

Nucleosil Si 100	3 µm	-	-	L3	**3013**	F
Nucleosil Si 100	5 µm	-	-	L3	**3015**	E
Nucleosil Si 100	7 µm	-	-	L3	**3017**	E
Nucleosil Si 100	10 µm	-	-	L3	**3010**	E
Nucleosil 100 C8	3 µm	-	8.5 %	L7	**3023**	F
Nucleosil 100 C8	5 µm	-	8.5 %	L7	**3025**	E
Nucleosil 100 C8	7 µm	-	8.5 %	L7	**3027**	E
Nucleosil 100 C8	10 µm	-	8.5 %	L7	**3020**	E
Nucleosil 100 C18	3 µm	+	15 %	L1	**3033**	F
Nucleosil 100 C18	5 µm	+	15 %	L1	**3035**	E
Nucleosil 100 C18	7 µm	+	15 %	L1	**3037**	E
Nucleosil 100 C18	10 µm	+	15 %	L1	**3030**	E
Nucleosil 100 C6H5	5 µm	-	8 %	L11	**3045**	E
Nucleosil 100 C6H5	7 µm	-	8 %	L11	**3047**	E
Nucleosil 100 -NH2	5 µm	-	3.5 %	L8	**3055**	E
Nucleosil 100 -NH2	10 µm	-	3.5 %	L8	**3050**	E
Nucleosil 100 -CN	5 µm	-	5 %	L10	**3065**	E
Nucleosil 100 -CN	10 µm	-	5 %	L10	**3060**	E
Nucleosil 100 -OH	5 µm	-	5 %	L20	**3075**	E
Nucleosil 100 -OH	7 µm	-	5 %	L20	**3077**	E
Nucleosil 100 -SA	5 µm	-	6.5 %	L9	**3085**	G
Nucleosil 100 -SA	10 µm	-	6.5 %	L9	**3080**	G
Nucleosil 100 -SB	5 µm	-	10 %	L14	**3095**	G
Nucleosil 100 -SB	10 µm	-	10 %	L14	**3090**	G

Nucleosil™ 300 — Macherey-Nagel

spherical • 300 Å / 100 m^2g^{-1}

Nucleosil 300 C4	5 µm	+	2 %	L26	**3305**	E
Nucleosil 300 C4	7 µm	+	2 %	L26	**3307**	E
Nucleosil 300 C4	10 µm	+	2 %	L26	**3310**	E
Nucleosil 300 C8	5 µm	-	3 %	L7	**3325**	E
Nucleosil 300 C8	7 µm	-	3 %	L7	**3327**	E
Nucleosil 300 C8	10 µm	-	3 %	L7	**3320**	E
Nucleosil 300 C18	5 µm	+	6.5 %	L1	**3335**	E
Nucleosil 300 C18	7 µm	+	6.5 %	L1	**3337**	E
Nucleosil 300 C18	10 µm	+	6.5 %	L1	**3330**	E
Nucleosil 300 OH	7 µm	-	1.5 %	L20	**3357**	E

Orbit™ 100 — MZ-AT

spherical • 100 Å / 340 m^2g^{-1}

Orbit 100 C18	3.5 µm	+	19 %	L1	**0902**	E2
Orbit 100 C18	4 µm	+	19 %	L1	**0904**	E2
Orbit 100 C18	5 µm	+	19 %	L1	**0901**	D
Orbit 100 C18	10 µm	+	19 %	L1	**0906**	D
Orbit 100 C8	3.5 µm	+	12 %	L7	**0912**	E2
Orbit 100 C8	5 µm	+	12 %	L7	**0911**	D
Orbit 100 C8	7 µm	+	12 %	L7	**0915**	D
Orbit 100 C8	10 µm	+	12 %	L7	**0916**	D
Orbit 100 C4	3.5 µm	+	7 %	L26	**0922**	E2
Orbit 100 C4	5 µm	+	7 %	L26	**0921**	D
Orbit 100 C4	10 µm	+	7 %	L26	**0926**	D
Orbit 100 CN	3.5 µm		6.5 %	L10	**0879**	E2
Orbit 100 CN	5 µm		6.5 %	L10	**0875**	D
Orbit 100 Sil	3.5 µm	-	0 %	L3	**0931**	E2
Orbit 100 Sil	5 µm	-	0 %	L3	**0930**	D
Orbit 100 Sil	10 µm	-	0 %	L3	**0932**	D

PerfectChrom™ — MZ-AT

spherical • 60 Å / 550 m^2g^{-1} • 100 Å / 350 m^2g^{-1}

PerfectChrom 60 Sil	5 µm	-	-	L3	**1575**	D
PerfectChrom 60 Sil	10 µm	-	-	L3	**1577**	D
PerfectChrom 100 Sil	5 µm	-	-	L3	**1525**	D
PerfectChrom 100 Sil	10 µm	-	-	L3	**1527**	D
PerfectChrom 100 C18	3 µm	+	17 %	L1	**1503**	F
PerfectChrom 100 C18	5 µm	+	17 %	L1	**1505**	D
PerfectChrom 100 C18	10 µm	+	17 %	L1	**1500**	D
PerfectChrom 100 C18	15 µm	+	17 %		**1506**	D
PerfectChrom 100 C18L	5 µm	+	8.5 %	L1	**1494**	E
PerfectChrom 100 C18L	10 µm	+	8.5 %	L1	**1496**	E
PerfectChrom 100 C18M	5 µm	+	12 %	L1	**1504**	E
PerfectChrom 100 C8	3 µm	+	8 %	L7	**1513**	F
PerfectChrom 100 C8	5 µm	+	8 %	L7	**1515**	D
PerfectChrom 100 C8	10 µm	+	8 %	L7	**1510**	D
PerfectChrom 100 C8M	5 µm	+	6 %	L7	**1514**	E
PerfectChrom 100 C1	5 µm	-	4 %	L13	**1535**	E
PerfectChrom 100 C4	5 µm	+	6 %	L26	**1539**	E
PerfectChrom 100 C6	5 µm	+	7 %	L15	**1543**	E
PerfectChrom 100 CN	5 µm	-	6 %	L10	**1555**	E
PerfectChrom 100 CN	7 µm	-	6 %	L10	**1556**	E
PerfectChrom 100 CN	10 µm	-	6 %	L10	**1557**	E
PerfectChrom 100 CN-M	10 µm	-		L10	**1584**	E
PerfectChrom 100 Diol	5 µm	-	5 %	L20	**1559**	E
PerfectChrom 100 Diol	10 µm	-	5 %	L20	**1560**	E
PerfectChrom 100 NH2	5 µm	-	3.5 %	L8	**1551**	E
PerfectChrom 100 NH2	10 µm	-	3.5 %	L8	**1552**	E
... 100 Phenyl	3 µm	-	11.5 %	L11	**1545**	F
... 100 Phenyl	5 µm	-	11.5 %	L11	**1547**	E
... 100 Phenyl	10 µm	-	11.5 %	L11	**1549**	E
... 100 Phenyl M	5 µm	-	8.5 %	L11	**1531**	E
... 100 Phenyl M	10 µm	-	8.5 %	L11	**1550**	E
... 100 Phenyl L	5 µm	-	6 %	L11	**1532**	E

Available HPLC-Packings

PerfectBond™ — MZ-AT

spherical • technical data & details: check page 16

PerfectBond ODS-H	3 µm	+	10.0 %	L1	**1194**	**F**
PerfectBond ODS-H	5 µm	+	10.0 %	L1	**1195**	**E**
PerfectBond ODS-HD	3 µm	+	18.5 %	L1	**1200**	**F**
PerfectBond ODS-HD	5 µm	+	18.5 %	L1	**1198**	**E2**
PerfectBond C18 ODS	5 µm	+	10.0 %	L1	**1190**	**E**
PerfectBond C18	10 µm	+	10.0 %	L1	**1011**	**E**
PerfectBond BDS 18	5 µm	+	11.0 %	L1	**1245**	**F**
PerfectBond C8-HD	3 µm	+	10.5 %	L7	**1202**	**F**
PerfectBond C8-HD	5 µm	+	10.5 %	L7	**1204**	**E2**
PerfectBond C8-H	3 µm	+	6.5 %	L7	**1193**	**F**
PerfectBond C8-H	5 µm	+	6.5 %	L7	**1192**	**E**
PerfectBond C8	5 µm	+	7.0 %	L7	**1018**	**E**
PerfectBond C1	3 µm	-	5.0 %	L13	**1180**	**F**
PerfectBond C1	5 µm	-	5.0 %	L13	**1182**	**E**
PerfectBond NH2	5 µm	-		L8	**1240**	**E**
PerfectBond Ph	5 µm	+	6.0 %	L11	**1220**	**E**
PerfectBond Ph-H	5 µm	+	5.0 %	L11	**1222**	**E**
PerfectBond Si	30-50 µm	-	-	L27	**1027**	**D**
PerfectBond C30	5 µm	+			**1255**	**G**

PerfectSil™ — MZ-AT

spherical • 80Å/220m^2g^{-1} • 100Å/450m^2g^{-1} • 120Å/300m^2g^{-1} • 300Å/100 m^2g^{-1}

PerfectSil 80 ODS-2	3 µm	+	11.5 %	L1	**1663**	**F**
PerfectSil 80 ODS-2	5 µm	+	11.5 %	L1	**1660**	**D**
PerfectSil 100 Sil	5 µm	-	-	L3	**0705**	**D**
PerfectSil 100 ODS-3	3 µm	+	15.0 %	L1	**0708**	**F**
PerfectSil 100 ODS-3	4 µm	+	15.0 %	L1	**0709**	**E**
PerfectSil 100 ODS-3	5 µm	+	15.0 %	L1	**0710**	**D**
PerfectSil 100 C8-3	5 µm	+	9.0 %	L7	**0715**	**D**
PerfectSil 100 Phenyl-3	5 µm	-	9.5 %	L11	**0735**	**D**
PerfectSil 100 NH2	5 µm	-	8.0 %	L8	**0720**	**D**
PerfectSil 100 CN-3	5 µm	-	4.0 %	L10	**0725**	**D**
PerfectSil 100 Diol	5 µm	-		L20	**0730**	**D**
PerfectSil 120 Sil	5 µm	-	-	L3	**1410**	**D**
PerfectSil 120 Sil	10 µm	-	-	L3	**1412**	**D**
PerfectSil 120 ODS	3 µm	+	15.0 %	L1	**1421**	**F**
PerfectSil 120 ODS	5 µm	+	15.0 %	L1	**1420**	**D**
PerfectSil 120 ODS	7 µm	+	15.0 %	L1	**1398**	**D**
PerfectSil 120 ODS	10 µm	+	15.0 %	L1	**1400**	**D**
PerfectSil 120 ODS-L	3 µm	+	13.0 %	L1	**1675**	**F**
PerfectSil 120 ODS-L	5 µm	+	13.0 %	L1	**1680**	**E**
PerfectSil 120 ODS-2	3 µm	+	17.0 %	L1	**1424**	**F**
PerfectSil 120 ODS-2	5 µm	+	17.0 %	L1	**1425**	**D**
PerfectSil 120 C1	3 µm	-	5.0 %	L13	**1429**	**F**
PerfectSil 120 C1	5 µm	-	5.0 %	L13	**1430**	**D**
PerfectSil 120 C4	3 µm	+	8.0 %	L26	**1433**	**F**
PerfectSil 120 C4	5 µm	+	8.0 %	L26	**1435**	**D**
PerfectSil 120 C8	3 µm	+	11.0 %	L7	**1441**	**F**
PerfectSil 120 C8	5 µm	+	11.0 %	L7	**1440**	**D**
PerfectSil 120 C8	10 µm	+	11.0 %	L7	**1442**	**D**
PerfectSil 120 CN	3 µm	-	7.5 %	L10	**1379**	**F**
PerfectSil 120 CN	5 µm	-	7.5 %	L10	**1380**	**D**
PerfectSil 120 Diol	10 µm			L20	**1340**	**D**
PerfectSil 120 NH2	3 µm	-	4.0 %	L8	**1446**	**F**
PerfectSil 120 NH2	4 µm	-	4.0 %	L8	**1444**	**F**
PerfectSil 120 NH2	5 µm	-	4.0 %	L8	**1445**	**D**
PerfectSil 120 Phenyl	3 µm	-	9.5 %	L11	**1447**	**F**
PerfectSil 120 Phenyl	4 µm	-	9.5 %	L11	**2446**	**F**
PerfectSil 120 Phenyl	5 µm	-	9.5 %	L11	**1448**	**D**
PerfectSil 120 Phenyl-M	5 µm	-	6.0 %	L11	**1449**	**D**
PerfectSil 120 Phenyl-L	5 µm	-	4.0 %	L11	**2448**	**D**
PerfectSil 200 ODS	5 µm	+	12.0 %	L1	**1418**	**E**
PerfectSil 300 Sil	5 µm	-	-	L3	**1450**	**E**
PerfectSil 300 Sil	10 µm	-	-	L3	**1840**	**D**
PerfectSil 300 Sil	15-20 µm	-	-		**1845**	**D**
PerfectSil 300 ODS C18	5 µm	+	9.0 %	L1	**1455**	**E2**
... 300 ODS C18	10 µm	+	9.0 %	L1	**1805**	**D**
... 300 ODS C18	15-20 µm	+	9.0 %		**1810**	**D**
PerfectSil 300 C4	5 µm	+	3.0 %	L26	**1460**	**E2**
PerfectSil 300 C4	10 µm	+	3.0 %	L26	**1830**	**D**
PerfectSil 300 C4	15-20 µm	+	3.0 %		**1835**	**D**
PerfectSil 300 C8	5 µm	+	5.0 %	L7	**1465**	**E2**
PerfectSil 300 C8	10 µm	+	5.0 %	L7	**1820**	**D**
PerfectSil 300 C8	15-20 µm	+	5.0 %		**1825**	**D**
PerfectSil 300 Diol	5 µm	-	5.0 %	L20	**1858**	**E2**
PerfectSil 1000 Sil	5 µm	-	-	L3	**1475**	**D**

PerfectSil™ Target — MZ-AT

spherical • 100 Å / 450 m^2g^{-1}

PerfectSil Target Sil 100	3 µm	-	-	L3	**0803**	**F**
PerfectSil Target Sil 100	5 µm	-	-	L3	**0800**	**E**
PerfectSil Target ODS-3	3 µm	+	17 %	L1	**0802**	**F**
PerfectSil Target ODS-3	5 µm	+	17 %	L1	**0801**	**E**
PerfectSil Target ODS-3	10 µm	+	17 %	L1	**0806**	**E**
PerfectSil Target C8-3	3 µm	+	9 %	L7	**0812**	**F**
PerfectSil Target C8-3	5 µm	+	9 %	L7	**0811**	**E**
PerfectSil Target CN-3	5 µm	-	7 %	L10	**0818**	**E**

PerfectSil™ Target HD — MZ-AT

spherical • 100 Å / 450 m^2g^{-1}

PerfectSil Target ODS-3 HD	3 µm	+	25 %	L1	**0833**	**F**
PerfectSil Target ODS-3 HD	5 µm	+	25 %	L1	**0831**	**E2**
PerfectSil Target ODS-3 HD	10 µm	+	25 %	L1	**0830**	**E2**
PerfectSil Target C8 HD	3 µm	+	15 %	L7	**0843**	**F**
PerfectSil Target C8 HD	5 µm	+	15 %	L7	**0845**	**E2**

Spherisorb™ — Waters

spherical • 80 Å / 220 m^2g^{-1}

Spherisorb Si	5 µm	-	-	L3	**7015**	**E**
Spherisorb Si	10 µm	-	-	L3	**7010**	**E**
Spherisorb C1	3 µm	-	2.2 %	L13	**7023**	**G**
Spherisorb C1	5 µm	-	2.2 %	L13	**7025**	**E**
Spherisorb C1	10 µm	-	2.2 %	L13	**7020**	**E**
Spherisorb C6	3 µm	+	4.7 %	L15	**7033**	**G**
Spherisorb C6	5 µm	+	4.7 %	L15	**7035**	**E**
Spherisorb C6	10 µm	+	4.7 %	L15	**7030**	**E**
Spherisorb C8	3 µm	+	5.8 %	L7	**7043**	**G**
Spherisorb C8	5 µm	+	5.8 %	L7	**7045**	**E**
Spherisorb C8	10 µm	+	5.8 %	L7	**7040**	**E**
Spherisorb ODS-1 C18	3 µm	+/-	6.2 %	L1	**7053**	**G**
Spherisorb ODS-1 C18	5 µm	+/-	6.2 %	L1	**7055**	**E**
Spherisorb ODS-1 C18	10 µm	+/-	6.2 %	L1	**7050**	**E**
Spherisorb ODS-2 C18	3 µm	+	11.5 %	L1	**7063**	**G**
Spherisorb ODS-2 C18	5 µm	+	11.5 %	L1	**7065**	**E**
Spherisorb ODS-2 C18	10 µm	+	11.5 %	L1	**7060**	**E**
Spherisorb -CN	3 µm	-	3.1 %	L10	**7073**	**G**
Spherisorb -CN	5 µm	-	3.1 %	L10	**7075**	**E**
Spherisorb -CN	10 µm	-	3.1 %	L10	**7070**	**E**
Spherisorb -NH2	3 µm	-	1.9 %	L8	**7083**	**G**
Spherisorb -NH2	5 µm	-	1.9 %	L8	**7085**	**E**
Spherisorb -Phenyl	3 µm	-	2.5 %	L11	**7093**	**G**
Spherisorb -Phenyl	5 µm	-	2.5 %	L11	**7095**	**E**
Spherisorb -Phenyl	10 µm	-	2.5 %	L11	**7090**	**E**

Superspher™ — Merck / EMD

spherical • 60 Å / 700 m^2g^{-1} • 100 Å / 350 m^2g^{-1}

Superspher Si 60	4 µm	-	-	L3	**0214**	**G**
Superspher 60 RP-8	4 µm	-	12.5 %	L7	**0224**	**G**
Superspher 60 RP-8 (e)	4 µm	+	13 %	L7	**0234**	**G**
Superspher 100 RP-18	4 µm	-	21 %	L1	**0254**	**G**
... 100 RP-18 (e)	4 µm	+	21.6 %	L1	**0264**	**G**
... 60 RP-Select B	4 µm	+	11.5 %	L7	**0244**	**G**

Please check our brochure "Merck" for other MERCK HPLC-columns and accessories

Zorbax™ — Agilent Technologies

spherical • 70 Å / 330 m^2g^{-1}

Zorbax Si	5 µm	-	-	L3	**0415**	**G**
Zorbax TMS C1	5 µm	+	4 %	L13	**0425**	**G**
Zorbax C8	5 µm	+	12 %	L7	**0445**	**G**
Zorbax C18	5 µm	+	20 %	L1	**0455**	**G**

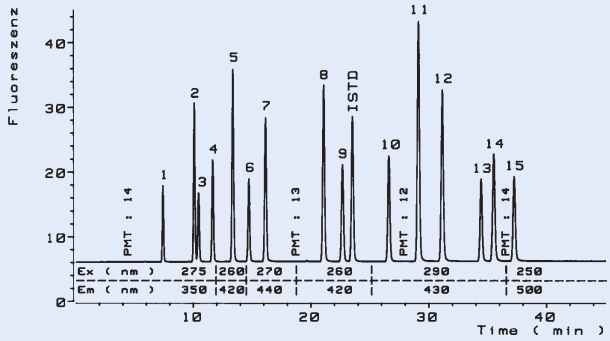
Original Zorbax HPLC-Columns available upon request.

MZ-PAH: Separation of Polyaromatic Hydrocarbons

Especially developed for the separation of Polyaromatic Hydrocarbons: MZ-PAH Columns by MZ-Analysentechnik.
MZ-PAH-Columns are well-known for their outstanding performance:

- Excellent selectivity
- Guaranteed separation of 6 PAK (DIN 38407-F8) and 16 PAK (EPA Method 610)
- High efficiency: > 75,000 m^{-1}
- High reproducibility between column-to-column
- Long lifetime
- Refillable stainless steel column

Separation of 16 PAK / EPA-Method



Column: MZ-PAH C18 5 µm 250 x 3.0 mm (LxID)

MZ-PAH 3 µm

Length x ID	Part-No.
150 x 3.0 mm	MZ1100-150030
Refill-Service	
150 x 3.0 mm	MZ1100-150030R
Guard Cartridges	
10x3.0 mm 5pc	MZ1100-VK1030
20x3.0 mm 5pc	MZ1100-VK2030

MZ-PAH 5 µm

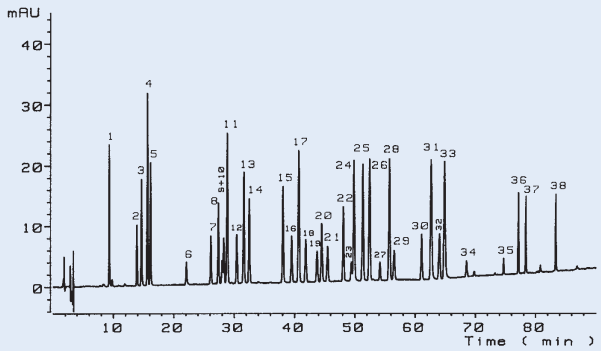
Length x ID	Part-No.
250 x 2.1 mm	MZ1111-250021
250 x 3.0 mm	MZ1111-250030
250 x 4.0 mm	MZ1111-250040
Refill-Service	
250 x 2.1 mm	MZ1111-250021R*
250 x 3.0 mm	MZ1111-250030R*
250 x 4.0 mm	MZ1111-250040R*
Guard Cartridges	
10x2.1 mm 5pc	MZ1111-VK1021
20x2.1 mm 5pc	MZ1111-VK2021
10x3.0 mm 5pc	MZ1111-VK1030
20x3.0 mm 5pc	MZ1111-VK2030
10x4.0 mm 5pc	MZ1111-VK1040
20x4.0 mm 5pc	MZ1111-VK2040

MZ-PBM: Separation of Pesticides

Especially developed for the separation of nitrogen-containing pesticides: MZ-PBM - proven by being part of DIN 38407-F12.

- Outstanding selectivity for nitrogen-containing pesticides
- High efficiency: > 110.000 m^{-1}
- High reproducibility from batch-to-batch thanks to a unique functionalization procedure
- Long lifetime
- Refillable stainless steel column

Separation of 38 Pesticides



Column: MZ-PBM C18 3 µm 250 x 3.0 mm (LxID)

MZ-PBM 3 µm

Length x ID	Part-No.
250 x 2.1 mm	MZ1122-250021
250 x 3.0 mm	MZ1122-250030
250 x 4.0 mm	MZ1122-250040
Refill-Service	
250 x 2.1 mm	MZ1122-250021R
250 x 3.0 mm	MZ1122-250030R
250 x 4.0 mm	MZ1122-250040R
Guard Cartridges	
10x2.1 mm 5pc	MZ1122-VK1021
20x2.1 mm 5pc	MZ1122-VK2021
10x3.0 mm 5pc	MZ1122-VK1030
20x3.0 mm 5pc	MZ1122-VK2030
10x4.0 mm 5pc	MZ1122-VK1040
20x4.0 mm 5pc	MZ1122-VK2040

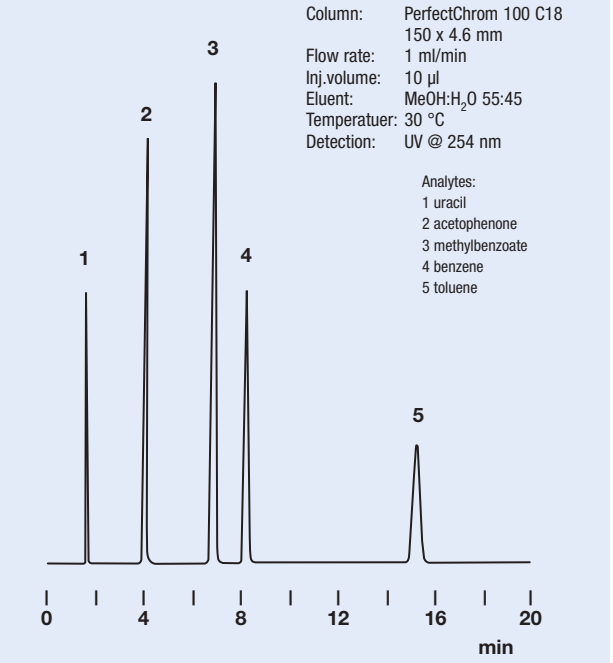
MZ ANALYSENTECHNIK

PerfectChrom®

The Perfect Choice for Reliable Routine Analytics

- Optimized for robust routine analysis
- Complex range of chemistries
- Each column tested individually
- Manufacturing process ISO 9001-certified
- Available as bulk media
- Refillable stainless steel column
- Best value for your money
- Narrowbore • Analytical • Preparative

Polar Compounds



PerfectChrom™ Technical Data

PerfectChrom...	particle size	ec	carbon contents	USP	Surface area	Pore-size	Code	Price group
60 Sil	5 µm	-	-	L3	550 m²/g	60 Å	**1575**	**D**
60 Sil	10 µm	-	-	L3	550 m²/g	60 Å	**1577**	**D**
100 Sil	5 µm	-	-	L3	350 m²/g	100 Å	**1525**	**D**
100 Sil	10 µm	-	-	L3	350 m²/g	100 Å	**1527**	**D**
100 C18	3 µm	+	17 %	L1	350 m²/g	100 Å	**1503**	**F**
100 C18	5 µm	+	17 %	L1	350 m²/g	100 Å	**1505**	**D**
100 C18	10 µm	+	17 %	L1	350 m²/g	100 Å	**1500**	**D**
100 C18	15 µm	+	17 %		350 m²/g	100 Å	**1506**	**D**
100 C18L	5 µm	+	8.5 %	L1	350 m²/g	100 Å	**1494**	**E**
100 C18L	10 µm	+	8.5 %	L1	350 m²/g	100 Å	**1496**	**E**
100 C18M	5 µm	+	12 %	L1	350 m²/g	100 Å	**1504**	**E**
100 C8	3 µm	+	8 %	L7	350 m²/g	100 Å	**1513**	**F**
100 C8	5 µm	+	8 %	L7	350 m²/g	100 Å	**1515**	**D**
100 C8	10 µm	+	8 %	L7	350 m²/g	100 Å	**1510**	**D**
100 C8M	5 µm	+	6 %	L7	350 m²/g	100 Å	**1514**	**E**
100 C1	5 µm	-	4 %	L13	350 m²/g	100 Å	**1535**	**E**
100 C4	5 µm	+	6 %	L26	350 m²/g	100 Å	**1539**	**E**
100 C6	5 µm	+	7 %	L15	350 m²/g	100 Å	**1543**	**E**
100 CN	5 µm	-	6 %	L10	350 m²/g	100 Å	**1555**	**E**
100 CN	7 µm	-	6 %	L10	350 m²/g	100 Å	**1556**	**E**
100 CN	10 µm	-	6 %	L10	350 m²/g	100 Å	**1557**	**E**
100 CN-M	10 µm	-		L10	350 m²/g	100 Å	**1584**	**E**
100 Diol	5 µm	-	5 %	L20	350 m²/g	100 Å	**1559**	**E**
100 Diol	10 µm	-	5 %	L20	350 m²/g	100 Å	**1560**	**E**
100 NH2	5 µm	-	3.5 %	L8	350 m²/g	100 Å	**1551**	**E**
100 NH2	10 µm	-	3.5 %	L8	350 m²/g	100 Å	**1552**	**E**
100 Phenyl	3 µm	-	11.5 %	L11	350 m²/g	100 Å	**1545**	**F**
100 Phenyl	5 µm	-	11.5 %	L11	350 m²/g	100 Å	**1547**	**E**
100 Phenyl	10 µm	-	11.5 %	L11	350 m²/g	100 Å	**1549**	**E**
100 Phenyl M	5 µm	-	8.5 %	L11	350 m²/g	100 Å	**1531**	**E**
100 Phenyl M	10 µm	-	8.5 %	L11	350 m²/g	100 Å	**1550**	**E**
100 Phenyl L	5 µm	-	6 %	L11	350 m²/g	100 Å	**1532**	**E**

Avaialble Column Dimensions [LxID]

50 x 2.1 mm	20 x 4.0 mm	20 x 4.6 mm
100 x 2.1 mm	33 x 4.0 mm	33 x 4.6 mm
125 x 2.1 mm	40 x 4.0 mm	40 x 4.6 mm
150 x 2.1 mm	50 x 4.0 mm	50 x 4.6 mm
200 x 2.1 mm	60 x 4.0 mm	60 x 4.6 mm
250 x 2.1 mm	75 x 4.0 mm	75 x 4.6 mm
50 x 3.0 mm	100 x 4.0 mm	100 x 4.6 mm
100 x 3.0 mm	125 x 4.0 mm	125 x 4.6 mm
125 x 3.0 mm	150 x 4.0 mm	150 x 4.6 mm
150 x 3.0 mm	200 x 4.0 mm	200 x 4.6 mm
200 x 3.0 mm	250 x 4.0 mm	250 x 4.6 mm
250 x 3.0 mm	300 x 4.0 mm	300 x 4.6 mm

Semiprep- and prep-scale columns available - please inquire.

Part-No.

MZ CODE – LEN IDØ

four-digit Materialcode | length in mm | ID in 1/10 mm

Example: PerfectChrom 100 C18 3 µm (**1503**) **150** x **4.0** mm

=> Best.-Nr.: MZ1503-150040

Please inquire details for Refill-Service

Orbit

State-of-the-Art for Routine Analytics

Our completely new-developed product-line Orbit is based on extremely pure and ultra-stable porous silica with 100 Å mean pore size. The State-of-the-Art base silica is especially optimized for the requirements of today's routine analytics. Orbit is as well robust and shows an excellent chromatographic resolution plus it offers a high costefficiency - which may be further increased employing our Refill-service at very reasonable prices.

Customers from routine analytics are thus now enabled to use the latest stationary phase technology without loss in suitability for daily use or a trade-off in chromatographic resolution. Orbit features excellent chromatographic separations with high efficiencies and symmetrical peak shape - while an excellent reproducibility from batch to batch and column to column is given.

Like all HPLC-columns from MZ-Analysentechnik, Orbit HPLC-columns are manufactured under fully ISO9001-certified conditions and ship with a quality certificate including the original test chromatogram.

Orbit can be packed in the full range of column dimensions (also available in semi-prep and preparative scale) and is shipping with 3.5; 5 or 10 µm particle size and typical chemistries needed for standard separation tasks in routine analysis - see table below.

Material-Codes

Orbit 100 C18	3.5 µm =	**0902**
Orbit 100 C18	4 µm =	**0904**
Orbit 100 C18	5 µm =	**0901**
Orbit 100 C18	10 µm =	**0906**
Orbit 100 C8	3.5 µm =	**0912**
Orbit 100 C8	5 µm =	**0911**
Orbit 100 C8	7 µm =	**0913**
Orbit 100 C8	10 µm =	**0916**
Orbit 100 C4	3.5 µm =	**0922**
Orbit 100 C4	5 µm =	**0921**
Orbit 100 C4	10 µm =	**0926**
Orbit 100 CN	3.5 µm =	**0875**
Orbit 100 CN	5 µm =	**0875**
Orbit 100 Sil	3.5 µm =	**0931**
Orbit 100 Sil	5 µm =	**0930**
Orbit 100 Sil	10 µm =	**0932**

Part-no.

MZ CODE – LEN IDØ

four-digit Materialcode | length in mm | ID in 1/10 mm

Example: Orbit C18 5 µm (**0901**) **250** x **4.6** mm

=> Part-no.: MZ0901-250046

Please inquire details for Refill-Service

Technical Data		Orbit
Pore Size		100 Å
Pore Volume		0,9 cm^3/g
BET-Surface Area		340 m^2/g
Particle Shape		spherical
Silica Purity		> 99.999 %
Endcapping		complete
Carbon Contents	CN:	6.5 %C
	C4:	7 %C
	C8:	12 %C
	C18:	19 %C

Available Column Dimensions [LxID]

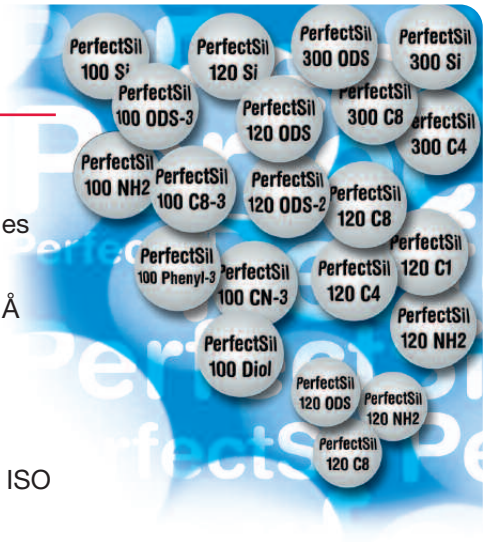
50 x 2.1 mm	50 x 3.0 mm
100 x 2.1 mm	100 x 3.0 mm
125 x 2.1 mm	125 x 3.0 mm
150 x 2.1 mm	150 x 3.0 mm
200 x 2.1 mm	200 x 3.0 mm
250 x 2.1 mm	250 x 3.0 mm
20 x 4.0 mm	20 x 4.6 mm
33 x 4.0 mm	33 x 4.6 mm
40 x 4.0 mm	40 x 4.6 mm
50 x 4.0 mm	50 x 4.6 mm
60 x 4.0 mm	60 x 4.6 mm
75 x 4.0 mm	75 x 4.6 mm
100 x 4.0 mm	100 x 4.6 mm
125 x 4.0 mm	125 x 4.6 mm
150 x 4.0 mm	150 x 4.6 mm
200 x 4.0 mm	200 x 4.6 mm
250 x 4.0 mm	250 x 4.6 mm
300 x 4.0 mm	300 x 4.6 mm

Semiprep & Prep HPLC

Columns with 8, 10, 20, 30, 40 & 50 mm ID are available in all commonly used length scales. Please inquire.

PerfectSil®

High Quality by MZ-Analysentechnik

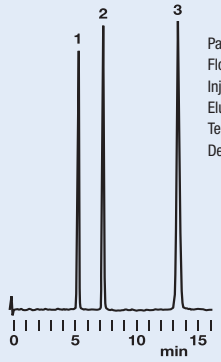


- Well-established in various labs world-wide
- Highly reproducible
- Each column tested individually
- Available particle sizes: 3; 5 & 10 µm
- Highly pure silica skeleton > 99,999 %
- Large variety of chemistries available
- Available in 100 and 120 Å pore size
- Excellent chemical and mechanical stability
- Manufactured under fully ISO 9001-certified conditions
- Refill-service available

PerfectSil™ Technical Data

	material code	particle size	pore size	surface area	pore volume	carbon contents	silica purity	end-capped
PerfectSil 100 Sil	**0705**	5 µm	100 Å	450 m²/g	1.05 ml/g	-	99.999	-
PerfectSil 100 ODS-3	**0708**	3 µm	100 Å	450 m²/g	1.05 ml/g	15.0 %	99.999	+
PerfectSil 100 ODS-3	**0710**	5 µm	100 Å	450 m²/g	1.05 ml/g	15.0 %	99.999	+
PerfectSil 100 C8-3	**0715**	5 µm	100 Å	450 m²/g	1.05 ml/g	9.0 %	99.999	+
PerfectSil 100 Phenyl-3	**0735**	5 µm	100 Å	450 m²/g	1.05 ml/g	9.5 %	99.999	-
PerfectSil 100 NH2	**0720**	5 µm	100 Å	450 m²/g	1.05 ml/g	8.0 %	99.999	-
PerfectSil 100 CN-3	**0725**	5 µm	100 Å	450 m²/g	1.05 ml/g	4.0 %	99.999	-
PerfectSil 100 Diol	**0730**	5 µm	100 Å	450 m²/g	1.05 ml/g	-	99.999	-
PerfectSil 120 Sil	**1410**	5 µm	120 Å	300 m²/g	1.00 ml/g	-	99.999	-
PerfectSil 120 Sil	**1412**	10 µm	120 Å	300 m²/g	1.00 ml/g	-	99.999	-
PerfectSil 120 ODS	**1421**	3 µm	120 Å	300 m²/g	1.00 ml/g	15.0 %	99.999	+
PerfectSil 120 ODS	**1420**	5 µm	120 Å	300 m²/g	1.00 ml/g	15.0 %	99.999	+
PerfectSil 120 ODS	**1398**	7 µm	120 Å	300 m²/g	1.00 ml/g	15.0 %	99.999	+
PerfectSil 120 ODS	**1400**	10 µm	120 Å	300 m²/g	1.00 ml/g	15.0 %	99.999	+
PerfectSil 120 ODS-L	**1675**	3 µm	120 Å	300 m²/g	1.00 ml/g	13.0 %	99.999	+
PerfectSil 120 ODS-L*	**1680**	5 µm	120 Å	300 m²/g	1.00 ml/g	13.0 %	99.999	+
PerfectSil 120 ODS-2	**1424**	3 µm	120 Å	300 m²/g	1.00 ml/g	17.0 %	99.999	+
PerfectSil 120 ODS-2	**1425**	5 µm	120 Å	300 m²/g	1.00 ml/g	17.0 %	99.999	+
PerfectSil 120 C1	**1429**	3 µm	120 Å	300 m²/g	1.00 ml/g	5.0 %	99.999	-
PerfectSil 120 C1	**1430**	5 µm	120 Å	300 m²/g	1.00 ml/g	5.0 %	99.999	-
PerfectSil 120 C4	**1433**	3 µm	120 Å	300 m²/g	1.00 ml/g	8.0 %	99.999	+
PerfectSil 120 C4	**1435**	5 µm	120 Å	300 m²/g	1.00 ml/g	8.0 %	99.999	+
PerfectSil 120 C8	**1441**	3 µm	120 Å	300 m²/g	1.00 ml/g	11.0 %	99.999	+
PerfectSil 120 C8	**1440**	5 µm	120 Å	300 m²/g	1.00 ml/g	11.0 %	99.999	+
PerfectSil 120 C8	**1442**	10 µm	120 Å	300 m²/g	1.00 ml/g	11.0 %	99.999	+
PerfectSil 120 CN	**1379**	3 µm	120 Å	300 m²/g	1.00 ml/g	7.5 %	99.999	-
PerfectSil 120 CN	**1380**	5 µm	120 Å	300 m²/g	1.00 ml/g	7.5 %	99.999	-
PerfectSil 120 NH2	**1446**	3 µm	120 Å	300 m²/g	1.00 ml/g	4.0 %	99.999	-
PerfectSil 120 NH2	**1445**	5 µm	120 Å	300 m²/g	1.00 ml/g	4.0 %	99.999	-
PerfectSil 120 Phenyl	**1447**	3 µm	120 Å	300 m²/g	1.00 ml/g	9.5 %	99.999	-
PerfectSil 120 Phenyl	**1448**	5 µm	120 Å	300 m²/g	1.00 ml/g	9.5 %	99.999	-
PerfectSil 120 Phenyl-M	**1449**	5 µm	120 Å	300 m²/g	1.00 ml/g	6.0 %	99.999	-
PerfectSil 120 Phenyl-L	**2448**	5 µm	120 Å	300 m²/g	1.00 ml/g	4.0 %	99.999	-

Steroids



Column: PerfectSil 100 ODS-3 5 µm 150 x 4.6 mm
Part-No.: MZ0710-150046
Flow rate: 1 ml/min
Inj.volume: 10 µl
Eluent: ACN :H_2O 45:55
Temp.: 40 °C
Detection: UV @ 280 nm

Analytes:
1 beta-Trenbolone
2 beta-Estradiole
3 Diethylstilbestrole

Available Column Dimensions [LxID]

50 x 2.1 mm	50 x 3.0 mm
100 x 2.1 mm	100 x 3.0 mm
125 x 2.1 mm	125 x 3.0 mm
150 x 2.1 mm	150 x 3.0 mm
200 x 2.1 mm	200 x 3.0 mm
250 x 2.1 mm	250 x 3.0 mm
20 x 4.0 mm	20 x 4.6 mm
33 x 4.0 mm	33 x 4.6 mm
40 x 4.0 mm	40 x 4.6 mm
50 x 4.0 mm	50 x 4.6 mm
60 x 4.0 mm	60 x 4.6 mm
75 x 4.0 mm	75 x 4.6 mm
100 x 4.0 mm	100 x 4.6 mm
125 x 4.0 mm	125 x 4.6 mm
150 x 4.0 mm	150 x 4.6 mm
200 x 4.0 mm	200 x 4.6 mm
250 x 4.0 mm	250 x 4.6 mm
300 x 4.0 mm	300 x 4.6 mm

Part-no.

MZ CODE – LEN IDØ

four-digit Materialcode | length in mm | ID in 1/10 mm

Example:
PerfectSil 120 ODS 5 µm (1421)
HPLC-Column 250 x 4.6 mm
=> Part-no.: MZ1421-250046
Please inquire details for Refill-Service

Semiprep & Prep HPLC

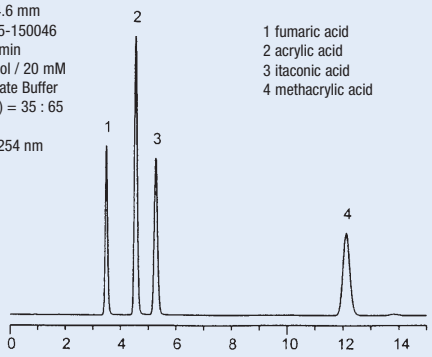
Columns with 8, 10, 20, 30, 40 & 50 mm ID are available in all commonly used length scales. Please inquire.

PerfectSil® 100 C8-3

Carboxylic Acids

Column: PerfectSil® 100 C8-3 5 µm 150 x 4.6 mm
Part-No.: MZ0715-150046
Flow rate: 1.0 ml/min
Eluent: Methanol / 20 mM Phosphate Buffer (pH 7.0) = 35 : 65
Temperature: 40 °C
Detection: UV @ 254 nm
Inj.-Volume: 1 µL

1 fumaric acid
2 acrylic acid
3 itaconic acid
4 methacrylic acid

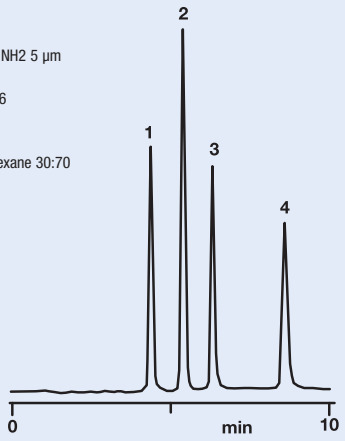


PerfectSil® 100 NH2

Tocopherol

Column: PerfectSil® 100 NH2 5 µm 250 x 4.6 mm
Part-No.: MZ0720-250046
Flow rate: 1 ml/min
Inj.volume: 1 µl
Eluent: ethylacetate : hexane 30:70
Temperature: 30 °C
Detection: UV @ 290 nm

1 α-Tocopherol
2 β-Tocopherol
3 γ-Tocopherol
4 δ-Tocopherol

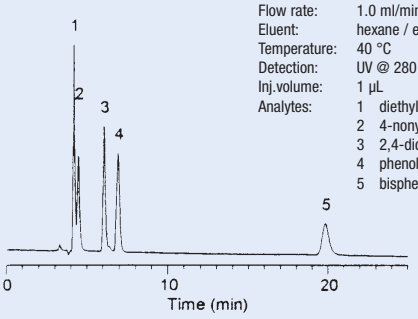


PerfectSil® 100 CN-3

Separation of Phenoles

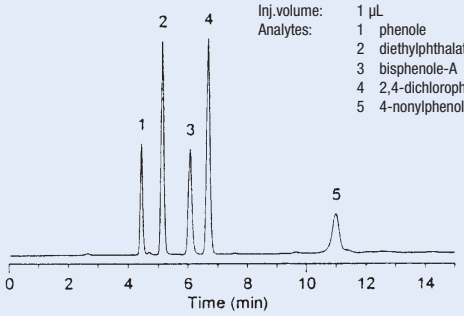
Normal-phase mode

Column: PerfectSil® 100 CN-3 5 µm 250 x 4.6 mm
Part-No.: MZ0725-250046
Flow rate: 1.0 ml/min
Eluent: hexane / ethanol = 90/10
Temperature: 40 °C
Detection: UV @ 280 nm
Inj.volume: 1 µL
Analytes:
1 diethylphthalate
2 4-nonylphenole
3 2,4-dichlorophenole
4 phenole
5 bisphenole-A



RP-Mode

Column: PerfectSil® 100 CN-3 5 µm 250 x 4.6 mm
Part-No.: MZ0725-250046
Flow rate: 1.0 ml/min
Eluent: acetonitrile / 20 mM phosphate-buffer (pH 3.0) = 45/55
Temperature: 40 °C
Detection: UV @ 280 nm
Inj.volume: 1 µL
Analytes:
1 phenole
2 diethylphthalate
3 bisphenole-A
4 2,4-dichlorophenole
5 4-nonylphenole

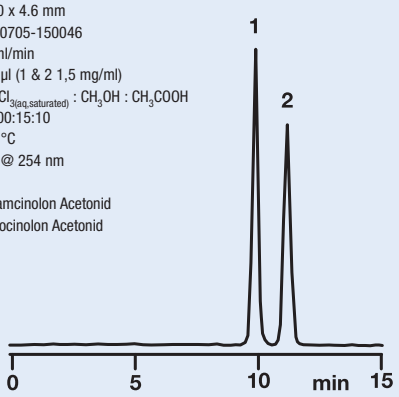


PerfectSil® 100 Si

Fluocinolon Acetonide

Column: PerfectSil® 100 Si 5 µm 150 x 4.6 mm
Part-No.: MZ0705-150046
Flow rate: 1 ml/min
Inj.volume: 20 µl (1 & 2 1,5 mg/ml)
Eluent: $CHCl_{3(aq.saturated)}$: CH_3OH : CH_3COOH 1000:15:10
Temperature: 30 °C
Detection: UV @ 254 nm

1 Triamcinolon Acetonid
2 Fluocinolon Acetonid

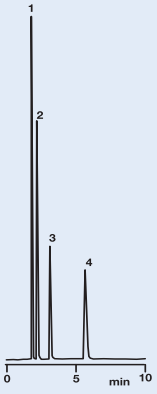


PerfectSil® 120 ODS-2

Nitrosoaminderivates

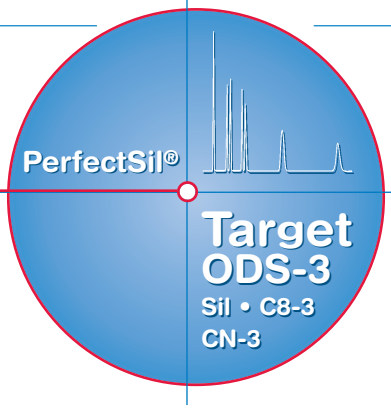
Column: PerfectSil® 120 ODS-2 5 µm 150 x 4.6 mm
Part-No.: MZ1425-150046
Flow rate: 1 ml/min
Eluent: CH_3CN / 10 mM KH_2PO_4 60 / 40
Temperature: 40 °C
Detection: UV @ 230 nm

1 N-Nitrosodimethylamine
2 N-Nitrosodiethylamine
3 N-Nitrosodi-n-propylamine
4 N-Nitrosodiphenylamine



MZ ANALYSENTECHNIK

PerfectSil® Target

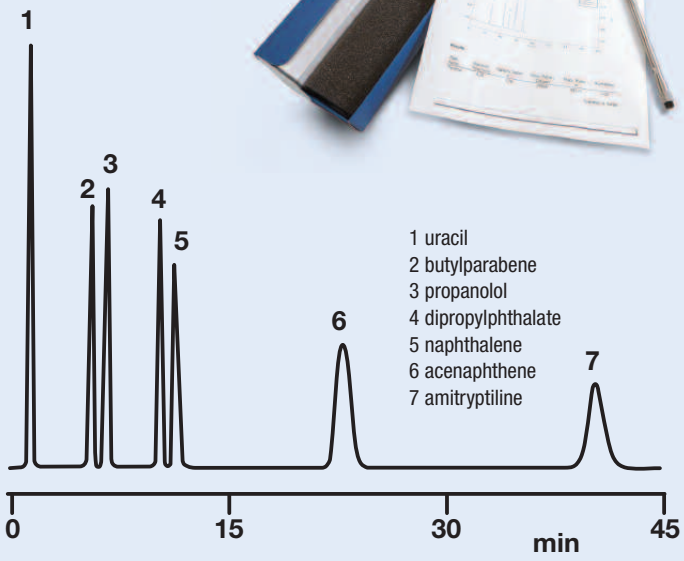


Excellent Performance + Peak Symmetry = Aim Achieved

- Chemistries: Sil • ODS-3 • C8-3 • CN-3
- Available particle size: 3 & 5 µm
- Highly pure silica: 99,999 %
- High mechanical & chemical resistibility
- Elaborated endcapping
- Excellent peak symmetry - even for basic compounds
- Exquisite reproducibility
- Each column tested individually
- Particularly suitable for LC/MS
- Manufacturing process ISO 9001-certified
- Ships with HPLC-Column Quality Certificate including authentic test-chromatogram

Amitryptilin

PerfectSil Target ODS-3 5 µm 200 x 4.6 mm
Part-No.: MZ0801-200046
Flow rate: 1.5 ml/min
Inj.volume: 5 µl
Eluent: methanol / 20 mM phosphate buffer pH=7.0
Temperature: 40 °C
Detection: UV @ 254 nm



1 uracil
2 butylparabene
3 propanolol
4 dipropylphthalate
5 naphthalene
6 acenaphthene
7 amitryptiline

Technical Data		Target
Pore Size:		100 Å
Pore Volume:		1.1 cm^3/g
BET Surface Area:		450 m^2/g
Carbon Contents	Sil:	-
	CN-3:	7 %
	C8-3:	9 %
	ODS-3:	17 %
Silica Purity:		> 99.999 %
Particle Shape:		spherical
Particle Size:		3; 5 & 10 µm
Metal Impurities:		< 5 ppm

Available Column Dimensions [LxID]

50 x 2.1 mm	50 x 3.0 mm
100 x 2.1 mm	100 x 3.0 mm
125 x 2.1 mm	125 x 3.0 mm
150 x 2.1 mm	150 x 3.0 mm
200 x 2.1 mm	200 x 3.0 mm
250 x 2.1 mm	250 x 3.0 mm
20 x 4.0 mm	20 x 4.6 mm
33 x 4.0 mm	33 x 4.6 mm
40 x 4.0 mm	40 x 4.6 mm
50 x 4.0 mm	50 x 4.6 mm
60 x 4.0 mm	60 x 4.6 mm
75 x 4.0 mm	75 x 4.6 mm
100 x 4.0 mm	100 x 4.6 mm
125 x 4.0 mm	125 x 4.6 mm
150 x 4.0 mm	150 x 4.6 mm
200 x 4.0 mm	200 x 4.6 mm
250 x 4.0 mm	250 x 4.6 mm
300 x 4.0 mm	300 x 4.6 mm

Part-no.

MZ CODE – LEN IDØ

four-digit Materialcode | length in mm | ID in 1/10 mm

Example: PerfectSil Target ODS-3 5 µm (**0801**) **200** x **4.6** mm
=> Best.-Nr.: MZ0801-200046
Please inquire for details of Refill-Service

Material-Code PerfectSil Target...		
Sil 100	3 µm =	**0803**
Sil 100	5 µm =	**0800**
ODS-3	3 µm =	**0802**
ODS-3	5 µm =	**0801**
ODS-3	10 µm =	**0806**
C8-3	3 µm =	**0812**
C8-3	5 µm =	**0811**
CN-3	5 µm =	**0818**

Semiprep & Prep HPLC

Columns with 8, 10, 20, 30, 40 & 50 mm ID are available in all commonly used length scales. Please inquire.

PerfectSil® Target HD

Reversed-Phase with extended pH-Stability

Some applications in modern reversed-phase-HPLC require extreme pH-conditions, causing most of today's silica-based stationary phase materials to show degradation. With those applications in mind, we developed **PerfectSil® Target HD** to enable permanent operation at a pH-range from pH = 2-11. Without any noticeable loss of performance or sign of degradation, **PerfectSil® Target HD** is based upon the same highly pure silica skeleton as **PerfectSil® Target**.

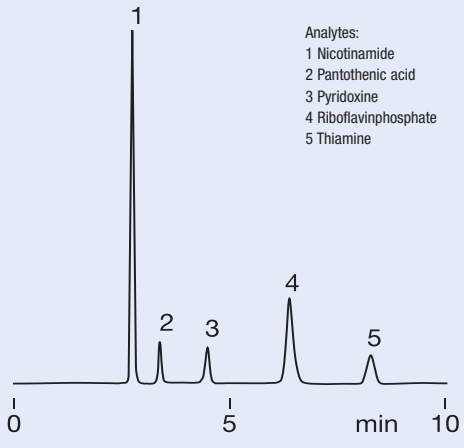
PerfectSil® Target HD is surface-shielded against basic and acidic degradation via application of a special post-treatment procedure after functionaliation with a virtually complete multiple-step endcapping procedure. The uniform reversed-phase chemistry in combination with its fully accessible 100 Å-pore-system, an optimized packing procedure and our state-of-the-art stainless steel column hardware enables us to produce and deliver HPLC-columns at the highest level of quality.

- Elaborated endcapping
- Maximum shielding of silica-surface
- High surface coverage
- pH-Range: pH = 2-11
- Excellent chemical stability
- Extended usability range
- Outstanding reproducibility from batch-to-batch and column-to-column
- Excellent peak symmetries for basic substances
- Enables to employ extremely steep gradients

Technical Data	Target HD
Pore Size:	100 Å
Pore Volume:	1,1 cm^3/g
BET Surface Area:	450 m^2/g
Carbon Contents ODS-3 HD:	25.0 %
C8 HD:	15.0 %
pH-Stability:	pH 2-11
Endcapping:	vollständig
Silica Purity:	> 99,999 %
Metal Impurities:	< 5 ppm

Vitamins

Column: PerfectSil Target ODS-3 HD 5 µm 150 x 4.6 mm
Part-No.: MZ0831-150046
Flow Rate: 1.0 ml/min
Inj.volume: 5 µl
Eluent: ACN : 0,2% H_3PO_4 + 5mM IPCC-06 / 10:90
Temperature: 40 °C
Detection: UV @ 210 nm



Analytes:
1 Nicotinamide
2 Pantothenic acid
3 Pyridoxine
4 Riboflavinphosphate
5 Thiamine

Available Column Dimensions [LxID]

50 x 2.1 mm	50 x 3.0 mm
100 x 2.1 mm	100 x 3.0 mm
125 x 2.1 mm	125 x 3.0 mm
150 x 2.1 mm	150 x 3.0 mm
200 x 2.1 mm	200 x 3.0 mm
250 x 2.1 mm	250 x 3.0 mm
20 x 4.0 mm	20 x 4.6 mm
33 x 4.0 mm	33 x 4.6 mm
40 x 4.0 mm	40 x 4.6 mm
50 x 4.0 mm	50 x 4.6 mm
60 x 4.0 mm	60 x 4.6 mm
75 x 4.0 mm	75 x 4.6 mm
100 x 4.0 mm	100 x 4.6 mm
125 x 4.0 mm	125 x 4.6 mm
150 x 4.0 mm	150 x 4.6 mm
200 x 4.0 mm	200 x 4.6 mm
250 x 4.0 mm	250 x 4.6 mm
300 x 4.0 mm	300 x 4.6 mm

Part.-No.

MZ CODE – LEN IDØ
four-digit Materialcode | length in mm | ID in 1/10 mm

Example:
PerfectSil Target ODS-3 HD 3 µm (**0833**) **150** x **4.0** mm
=> Best.-Nr.: MZ0833-150040

Please inquire for details of Refill-Service

Material-Code
PerfectSil Target...

ODS-3 HD	3 µm = **0833**
ODS-3 HD	5 µm = **0831**
ODS-3 HD	10 µm = **0830**
C8 HD	3 µm = **0843**
C8 HD	5 µm = **0845**

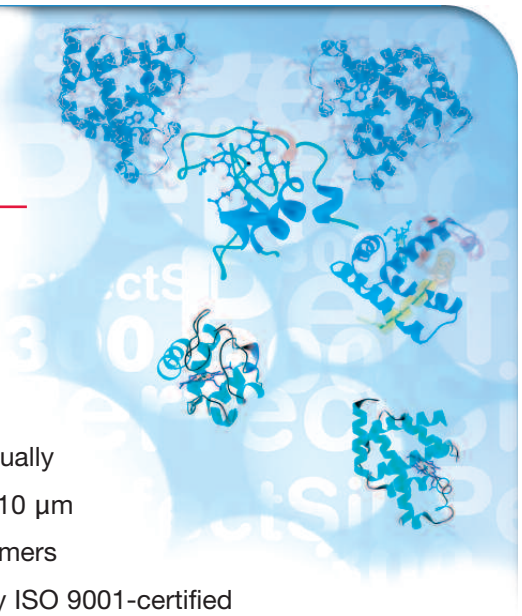
Semiprep & Prep HPLC

Columns with 8, 10, 20, 30, 40 & 50 mm ID are available in all commonly used length scales. Please inquire.

MZ ANALYSENTECHNIK

PerfectSil®300

High Quality for Bioseparations

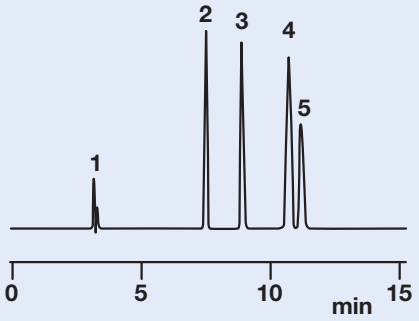


- State-of-the-art technology
- Ultra pure silica 99,999 %
- High-end surface chemistry
- Enables steep gradients
- Very low phase bleeding
- Suitable for LC/MS-applications
- High mechanical stability
- Excellent chemical stability
- Highly reproducible
- Refillable high-quality stainless-steel hardware
- Each column tested individually
- Available particle size: 5 & 10 µm
- 300 Å pore size for biopolymers
- Manufacturing process fully ISO 9001-certified

Peptide Hormones

Column: PerfectSil 300 C4 5 µm 250 x 4.6 mm
Part-No.: MZ1460-250046

Flow rate: 1 ml/min
Inj.volume: 10 µl
Eluent: A: 0.1 % TFA/water
B: 0.09 % TFA in ACN:water 90:10 (v/v)
Gradient: 0 min: A:B 90:10 linear to
8 min: A:B 75:25 linear to
14 min: A:B 70:30 isocratic to
15-20 min recalibration A:B 90:10
Detection: UV @ 215 nm



Analytes:
1 dead time marker / inj.
2 vasotocine
3 vasopressine
4 isotocine
5 oxytocine

PerfectSil™ 300 — Technical Data

	code	particle size	pore-size	surface area	pore volume	carbon contents	silica purity	end-capped	price-group
PerfectSil 300 Sil	**1450**	5 µm	300 Å	100 m²/g	1.05 ml/g	-	99.999	-	E
PerfectSil 300 Sil	**1840**	10 µm	300 Å	100 m²/g	1.05 ml/g	-	99.999	-	D
PerfectSil 300 Sil	**1845**	15-20 µm	300 Å	100 m²/g	1.05 ml/g	-	99.999	-	D
PerfectSil 300 ODS C18	**1455**	5 µm	300 Å	100 m²/g	1.05 ml/g	9.0 %	99.999	+	E2
PerfectSil 300 ODS C18	**1805**	10 µm	300 Å	100 m²/g	1.05 ml/g	9.0 %	99.999	+	D
PerfectSil 300 ODS C18	**1810**	15-20 µm	300 Å	100 m²/g	1.05 ml/g	9.0 %	99.999	+	D
PerfectSil 300 C4	**1460**	5 µm	300 Å	100 m²/g	1.05 ml/g	3.0 %	99.999	+	E2
PerfectSil 300 C4	**1830**	10 µm	300 Å	100 m²/g	1.05 ml/g	3.0 %	99.999	+	D
PerfectSil 300 C4	**1835**	15-20 µm	300 Å	100 m²/g	1.05 ml/g	3.0 %	99.999	+	D
PerfectSil 300 C8	**1465**	5 µm	300 Å	100 m²/g	1.05 ml/g	5.0 %	99.999	+	E2
PerfectSil 300 C8	**1820**	10 µm	300 Å	100 m²/g	1.05 ml/g	5.0 %	99.999	+	D
PerfectSil 300 C8	**1825**	15-20 µm	300 Å	100 m²/g	1.05 ml/g	5.0 %	99.999	+	D
PerfectSil 300 Diol	**1858**	5 µm	300 Å	100 m²/g	1.05 ml/g	5.0 %	99.999	-	E2

Please check tables on page 3 of this brochure for information about prices and available column dimensions for analytical HPLC columns. Information about guard cartridges and holders can be found on page 18. All staionary phases are also available as semiprep and preparative HPLC columns with ID from 8 - 50 mm - please inquire.

Each HPLC-column is packed individually upon order in a non-batch process. Upon request – as for example for validation purposes – we pack columns according to specific needs as column-sets, pack columns as batch process on pre-demand and if needed we may perform customer-specific batch-reservation of packing media. Please inquire for details and conditions.

Part-no.

MZ CODE – LEN IDØ
four-digit Materialcode | length in mm | ID in 1/10 mm

Example:
PerfectSil 300 ODS 5 µm (**1455**)
HPLC-column **250** x **4.6** mm
=> Part-no.: MZ1455-250046
Please inquire for details of Refill-Service

all prices in EUR excluding VAT

MZ ANALYSENTECHNIK

MZ-Aqua Perfect

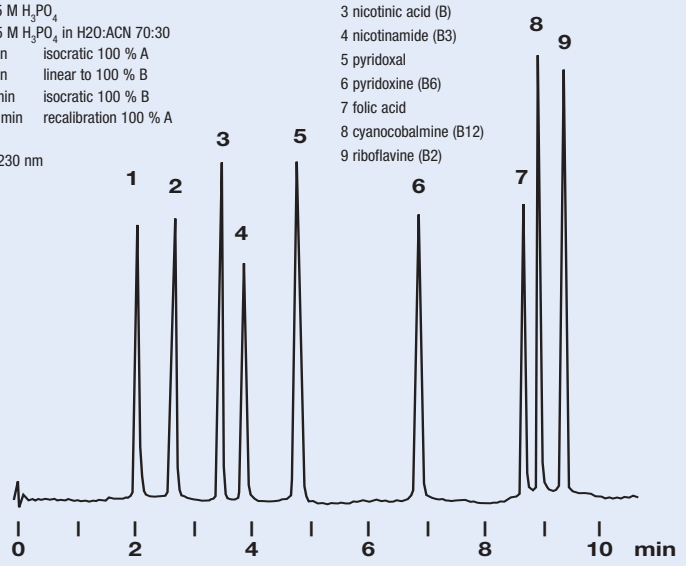
C18 for up to 100% Aqueous Applications

- Elaborate C18-chemistry combined with new hydrophilic endcapping
- Compatible with up to 100% aqueous eluents
- Enables design of extremely steep gradients
- Short recalibration time
- Excellent reproducibility
- Highly pure & totally porous base silica
- Spherical particles with low polydispersity
- High chemical and mechanical resistibility
- Manufacturing process fully ISO 9001-certified
- Low back-pressure
- High durability

Water-soluble Vitamins

Column: MZ-Aqua Perfect C18 3 µm 200 x 4.0 mm
Part-No.: MZ0610-200040
Flow rate: 1.25 ml/min
Inj.volume: 10 µl
Eluent: A: 0.05 M H_3PO_4
B: 0.05 M H_3PO_4 in H2O:ACN 70:30
Gradient: 0-3 min isocratic 100 % A
3-6 min linear to 100 % B
6-12 min isocratic 100 % B
12-15 min recalibration 100 % A
Temperature: RT
Detection: UV @ 230 nm

Analytes:
1 thyamin (B1)
2 ascorbic acid (C)
3 nicotinic acid (B)
4 nicotinamide (B3)
5 pyridoxal
6 pyridoxine (B6)
7 folic acid
8 cyanocobalmine (B12)
9 riboflavine (B2)



Technical Data

Particle Size	3/5/7/10 µm
Particle Shape	spherical
Pore Size	120 / 200 Å
BET Surface Area	310 / 220 m^2/g
Carbon Contents	15 / 11 % C

Available Column Dimensions [LxID]

50 x 2.1 mm	50 x 3.0 mm
100 x 2.1 mm	100 x 3.0 mm
125 x 2.1 mm	125 x 3.0 mm
150 x 2.1 mm	150 x 3.0 mm
200 x 2.1 mm	200 x 3.0 mm
250 x 2.1 mm	250 x 3.0 mm
20 x 4.0 mm	20 x 4.6 mm
33 x 4.0 mm	33 x 4.6 mm
40 x 4.0 mm	40 x 4.6 mm
50 x 4.0 mm	50 x 4.6 mm
60 x 4.0 mm	60 x 4.6 mm
75 x 4.0 mm	75 x 4.6 mm
100 x 4.0 mm	100 x 4.6 mm
125 x 4.0 mm	125 x 4.6 mm
150 x 4.0 mm	150 x 4.6 mm
200 x 4.0 mm	200 x 4.6 mm
250 x 4.0 mm	250 x 4.6 mm
300 x 4.0 mm	300 x 4.6 mm

Applications

tricyclic antidepressants • theophylline • water-soluble vitamins • organic acids • catecholamines • caffeine • all kind of C18 applications

Part-No.

MZ CODE – LEN IDØ
CODE: four-digit Materialcode
LEN: length in mm
IDØ: ID in 1/10 mm

Example: MZ-AquaPerfect 5 µm (0612) 250 x 4.6 mm
=> Part-no.: MZ0612-250040
Please inquire details for Refill-Service

Materialcodes MZ-AquaPerfect

C18	3 µm = 0610
C18	5 µm = 0612
C18	7 µm = 0613
C18	10 µm = 0614
200 C18	3 µm = 0620
200 C18	5 µm = 0622

Semiprep & Prep HPLC

Columns with 8, 10, 20, 30, 40 & 50 mm ID are available in all commonly used length scales. Please inquire.

MZ-ANALYSENTECHNIK GMBH · Barcelona-Allee 17 · D-55129 Mainz · Tel. ++49-6131/880 96 -0 · Fax -20

PerfectBond®

State-of-the-Art- + Best Value-Replacement for Classical Applications

Our recently introduced product-line **PerfectBond™** is based on a series of selected state-of-the-art silica (99.999 % purity), to provide modern replacements for traditional stationary phases. The **PerfectBond™**-product-range is continuously extended, enabling us to offer our customers reliable and cost-effective replacements for various well-known classical stationary phases.

Classical stationary phases like µBondapak™ are still frequently used for many applications. Mainly because of their unique selectivity and retentivity - and despite disadvantages like high back-pressure resulting from the nature of irregularly shaped particle morphology. In case of µBondapak™ we offer **PerfectBond™ C18** as excellent replacement: based on spherical and totally porous base silica, all chromatographic performance values are widely enhanced.

PerfectBond™ is based upon an ultra pure, state-of-the-art-silica, which is absolutely spherical and functionalized under ISO-9001-certified conditions. We carefully select base silica, chemistry and carbon load to get an optimum match of the classical material. This enables us to deliver replacements for traditional stationary phases with the same retentivity and selectivity as the original material. **PerfectBond™**-HPLC-columns feature lower backpressure and enhanced efficiency than the original. Replace your classic column with a **PerfectBond™**-HPLC-Column and note the improved cost-efficiency reslting from longer column-lifetime and possibilities of refill-service.

Our range of **PerfectBond™**-HPLC-columns is continuously growing. Please inquire, if or when we can provide a state-of-the-art replacement for your “classical” HPLC-column.

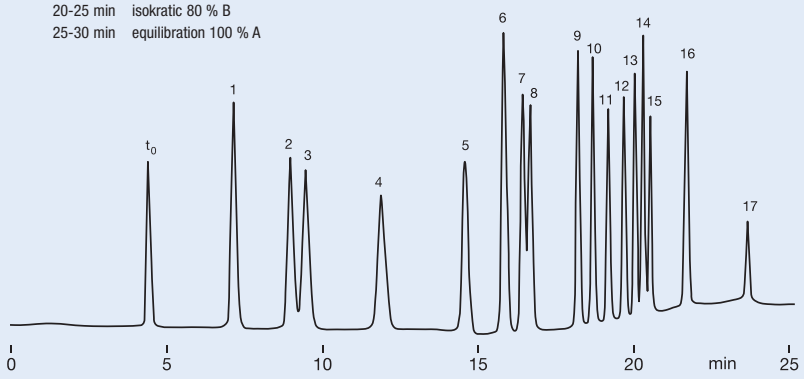
Technical Data — PerfectBond™-Series

	particle size	code	price group	pore size	surface area	chemistry	carbon contens	endcapping	morphology	silica purity
PerfectBond ODS-H	3 µm	**1194**	**F**	120 Å	170 m²/g	C18	10.0 %	+	spherical	99.999 %
PerfectBond ODS-H	5 µm	**1195**	**E**	120 Å	170 m²/g	C18	10.0 %	+	spherical	99.999 %
PerfectBond ODS-HD	3 µm	**1200**	**F**	150 Å	320 m²/g	C18	18.5 %	+	spherical	99.999 %
PerfectBond ODS-HD	5 µm	**1198**	**E2**	150 Å	320 m²/g	C18	18.5 %	+	spherical	99.999 %
PerfectBond BDS 18	5 µm	**1245**	**F**	130 Å	170 m²/g	C18	11.0 %	+	spherical	99.999 %
PerfectBond C18 ODS	5 µm	**1190**	**E**	125 Å	300 m²/g	C18	10.0 %	+	spherical	99.999 %
PerfectBond C18 *Replacement for µBondapak™C18 10 µm*	10 µm	**1011**	**E**	125 Å	300 m²/g	C18	10.0 %	+	spherical	99.999 %
PerfectBond C8-HD	3 µm	**1202**	**F**	150 Å	320 m²/g	C8	10.5 %	+	spherical	99.999 %
PerfectBond C8-HD	5 µm	**1204**	**E2**	150 Å	320 m²/g	C8	10.5 %	+	spherical	99.999 %
PerfectBond C8-H	3 µm	**1193**	**F**	120 Å	170 m²/g	C8	6.5 %	+	spherical	99.999 %
PerfectBond C8-H	5 µm	**1192**	**E**	120 Å	170 m²/g	C8	6.5 %	+	spherical	99.999 %
PerfectBond C8	5 µm	**1018**	**E**	125 Å	300 m²/g	C8	7.0 %	+	spherical	99.999 %
PerfectBond C1	3 µm	**1180**	**F**	120 Å	170 m²/g	C1	5.0 %	-	spherical	99.999 %
PerfectBond C1	5 µm	**1182**	**E**	120 Å	170 m²/g	C1	5.0 %	-	spherical	99.999 %
PerfectBond C30	5 µm	**1245**	**G**			C30		+	spherical	99.999 %
PerfectBond Ph	5 µm	**1220**	**E**	120 Å	200 m²/g	Phenyl	6.0 %	+	spherical	99.999 %
PerfectBond Ph-H	5 µm	**1222**	**E**	120 Å	170 m²/g	Phenyl	5.0 %	+	spherical	99.999 %
PerfectBond Si	30-50 µm	**1027**	**D**	100 Å	320 m²/g	Si	-	-	spherical	99.999 %

Chlorophenoles

Column: PerfectBond ODS-HD 5 µm, 250 x 4.0 mm
Flow rate: 1 ml/min
Temperature: 30 °C
Detection: UV @ 280 nm
Eluent: A: 50 % Methanol/H_2O + 0,1 % H_3PO_4
B: 100 % Methanol
Gradient: 0-10 min isocratic 100 % A
10-20 min linear to 80 % B
20-25 min isokratic 80 % B
25-30 min equilibration 100 % A

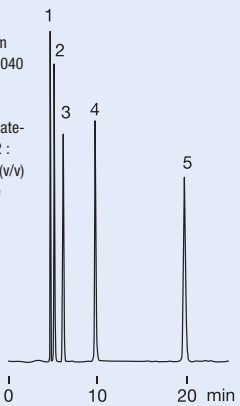
Analytes:
1 2-chlorophenole
2 4-chlorophenole
3 3-chlorophenole
4 2,6-dichlorophenole
5 2,3-dichlorophenole
6 2,5-dichlorophenole
7 2,4-dichlorophenole
8 3,4-dichlorophenole
9 3,5-dichlorophenole
10 2,3,6-trichlorophenole
11 2,3,4-trichlorophenole
12 2,4,6-trichlorophenole
13 2,4,5-trichlorophenole
14 2,3,5-trichlorophenole
15 2,3,5,6-tetrachlorophenole
16 2,3,4,5-tetrachlorophenole
17 pentachlorophenole



Amino Acids / Peptides

Column: PerfectBond C18 10 µm, 300 x 4.0 mm
Part-No.: MZ1011-300040
Flow rate: 1.3 ml/min
Inj.volume: 5 µl
Eluent: 0,1M Phosphate-Buffer pH 3,2 : ACN / 89:11 (v/v)
Detection: Fluorescence 385/515 nm

Analytes:
1 Cysteine
2 Cysteinglycine
3 Homocysteine
4 Glutathione
5 N-Acetylcysteine



➠ Please ask us for the optimum **PerfectBond™**-replacement for your classical stationary phase media:

phone +49-6131-68 66 19

IDEX HEALTH & SCIENCE

We offer the complete product range from „IDEX Health & Science Valves". The following lists the part-no´s for most frequently requested products. Please inquire for parts not listed here.

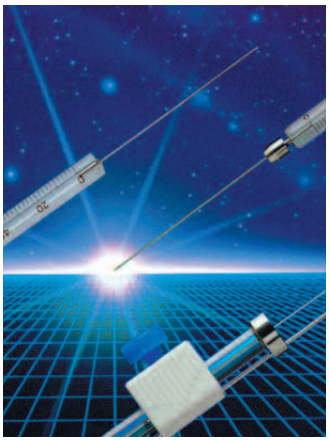
Part-No.	Product
RH7010-039	rotor seal Vespel for 7010/7000/7040
RH7010-040	stator für 7010/7125
RH7010-071	rotor seal Tefzel for 7010/7000/7040
RH7010-999	RheBuild Kit for 7010
sample loops stainless steel	
RH7021 10 µl	RH7024 100 µl RH7027 1 ml
RH7022 20 µl	RH7025 200 µl RH7028 2 ml
RH7023 50 µl	RH7026 500 µl RH7029 5 ml
RH7000	switching valve
RH7030	3-way switching valve
RH7060	6-positions switching valve
RH7125	sample injector
RH7725	sample injector with MBB *front-loading, follow-up of 7125*
RH7725i	sample injector with position sensing switch and MBB
RH8125	syringe loading injector *front-loading for micro-HPLC*
RH8125-038	rotor seal for 8125/8126
RH7520-999	RheBuilt Kit for 7520/7526
RH3725i	sample injector PEEK *front-loading, preparative scale*
RH3725i-038	sample injector stainless steel *front-loading, preparative scale*
RH9010	sample injection valve PEEK *rear-loading, for analytical HPLC*
RH9725	sample injector PEEK with MBB (ex-9125) *front-loading, for analytical HPLC*
sample loops PEEK	
RH9055-020 5 µl	RH9055-023 50 µl RH9055-026 500 µl
RH9055-021 10 µl	RH9055-024 100 µl RH9055-027 1 ml
RH9055-022 20 µl	RH9055-025 200 µl RH9055-028 2 ml
RH7335	0.5 µm column inlet filter, ID 3.0 mm
RH7335-010	Replacement filter discs for RH7335 5/pk

HPLC-Syringes

EXMIRE

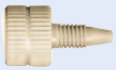
Exmire® HPLC-High Quality Sampling Syringes

volume	smallest amount	code
5 µl	0.1 µl	MSR 05
10 µl	0.2 µl	MSR 10
25 µl	0.5 µl	MSR 25
50 µl	1.0 µl	MSR 50
100 µl	2.0 µl	MSR 100
250 µl	5.0 µl	MSR 250
500 µl	10.0 µl	MSR 500



Tools & Accessories - PEEK / Biocompatible

HPLC-ACCESSORIES

Part-No.	Product			
AP0313	PEEK-tubing	AD 1/16“ x 0.13 mm ID		3 m
AP0317		AD 1/16“ x 0.17 mm ID		3 m
AP0325		AD 1/16“ x 0.25 mm ID		3 m
AP0350		AD 1/16“ x 0.50 mm ID		3 m
AP0375		AD 1/16“ x 0.75 mm ID		3 m
AP0513	PEEK-tubings kit	AD 1/16“ x 0.13 mm ID		50; 100; 200 mm
AP0517	- pre-cut -	AD 1/16“ x 0.17 mm ID		50; 100; 200 mm
AP0525	5 pieces of each length	AD 1/16“ x 0.25 mm ID		50; 100; 200 mm
AP0550		AD 1/16“ x 0.50 mm ID		50; 100; 200 mm
AP0575		AD 1/16“ x 0.75 mm ID		50; 100; 200 mm
AP5001		fingertight-fittings	PEEK	10 pcs
	coupler universal fingertight PEEK			
AP5103		0.13 mm ID („red“)		1 piece
AP5108		0.18 mm ID („yellow“)		1 piece
AP5101		0.25 mm ID („blue“) / universal		1 piece
AP5105		0.50 mm ID („orange“)		1 piece
AP5201		union PEEK (incl. 2 fingertight-fittings)	1/16”	1 set
AP5301		tee-piece PEEK (incl. 3 fingertight-fittings)	1/16”	1 set
AP5401		cross PEEK (incl. 4 fingertight-fittings)	1/16”	1 set
AP5601		plug PEEK fingertight	1/16”	1 piece
AN5501 AN5510		plug Nylon	1/16”	10 pieces 100 pieces

AR6200
Clean-Cut for cutting polymeric tubings

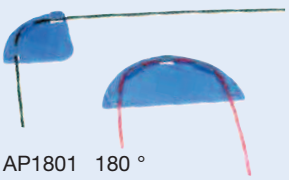
AR6201
Replacement blade for Clean-Cut

AR6300
Guillotine-Cutter

AR6301
Replacement blade for Guillotine-Cutter

AP7500
Last-drop mobile phase-filter with 2,5 µm PTFE-Fritt

elbow for PEEK-tubing
AP0901 90°



AP1801 180 °

Tools & Accessories - Stainless Steel

HPLC-Accessories

Part-No.	Product			
AS0301	Stainless Steel tubing		AD 1/16“ x 0.13 mm ID	3 m
AS0318			AD 1/16“ x 0.18 mm ID	3 m
AS0325			AD 1/16“ x 0.25 mm ID	3 m
AS0350			AD 1/16“ x 0.50 mm ID	3 m
AS0370			AD 1/16“ x 0.75 mm ID	3 m
AS0310			AD 1/16“ x 1.00 mm ID	3 m
AS0501	Stainless Steel tubing		AD 1/16“ x 0.13 mm ID	50 mm
AS0341	- pre-cut -		AD 1/16“ x 0.13 mm ID	100 mm
AS0201			AD 1/16“ x 0.13 mm ID	200 mm
AS0525			AD 1/16“ x 0.25 mm ID	50 mm
AS0125			AD 1/16“ x 0.25 mm ID	100 mm
AS0225			AD 1/16“ x 0.25 mm ID	200 mm
AS0550			AD 1/16“ x 0.50 mm ID	50 mm
AS0150			AD 1/16“ x 0.50 mm ID	100 mm
AS0250			AD 1/16“ x 0.50 mm ID	200 mm
AS0570			AD 1/16“ x 0.75 mm ID	50 mm
AS0170			AD 1/16“ x 0.75 mm ID	100 mm
AS0270			AD 1/16“ x 0.75 mm ID	200 mm
AS1001	stainless steel ferrules		1/16“	10 pcs
AS1010	stainless steel ferrules		1/16“	100 pcs
AR1101	stainless steel ferrules		1/16“ Rheodyne	10 pcs
AS2001	fitting screws		stainless steel short	10 pcs
AS2101	fitting screws		stainless steel long	10 pcs
AS2201	fitting screws		stainless steel extra large	10 pcs
AS3301		plug stainless steel	1/16“	1 piece
AS3001		ZDV-union stainless steel	1/16“	1 piece
AS3101		tee-piece stainless steel	1/16“	1 piece
AS3201		cross stainless steel	1/16“	1 piece

Accessories for HPLC-Columns

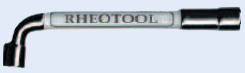
AS0110	sieve (glass fibre) analytical		10 pcs
AS0115	PTFE sealing gasket		25 pcs
AS0101	sieve (metal) analytical	5 µm	10 pcs
AS0105	sieve (metal) analytical	3 µm	10 pcs
AS0120	sieve sandwich 3 µm for column end 2.1; 3.0; 4.0 & 4.6 mm ID (2 metal sieves. 3 glass fibre sieves. 1 sealing gasket)		1 Set
AS0121	sieve sandwich 5 µm		1 Set

AS6001
stainless steel tubing cutter

AS6000
pliers for stainless steel tubings

AS7500
Last-drop mobile phase-filter with 2.0 µm stainless steel frit

AR6100
Rheotool

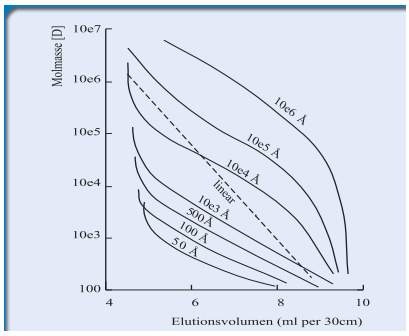


AC7000
EasyFlange Kit

MZ-Gel SD*plus* - for Organic Media

MZ-Gel SD*plus* by MZ-Analysentechnik is a high-performance styrene-/divinylbenzene-copolymer, tightly classed with a narrow pore size distribution. The excellent quality of this highly cross linked packing media enables us to pack GPC-columns with both a long lifetime and extraordinary high column efficiencies.

For example: columns with 3 µm particle size are delivered with guaranteed theoretical plate-numbers: > 100,000 m^{-1}



Codes MZ-Gel SD*plus*

Porosity	3 µm	5 µm	10 µm
50 Å	5553	5555	5530
100 Å	5013	5015	5010
500 Å	5053	5055	5050
1,000 Å	5303	5305	5300
10^4 Å	-	5405	5400
10^5 Å	-	5505	5500
10^6 Å	-	5605	5600
Linear	-	5005	5000

Part-No.

MZ CODE – LEN IDØ

four-digit Materialcode | length in mm | ID in 1/10 mm

Example:

MZ-Gel SD*plus* 100 Å 5 µm (5015);
SEC-Column 300 x 8.0 mm
=> Part.-No.: MZ5015-300080

Please inquire details for Refill-Service

Analytical 8 mm ID

Length x ID	Particle Size	Porosity
300 x 8 mm	3 µm	50 Å; 100 Å; 500 Å; 10^3 Å
	5 µm	50 Å; 100 Å; 500 Å; 10^3 Å; 10^4 Å; 10^5 Å; 10^6 Å
	5 µm	linear
	10 µm	50 Å; 100 Å; 500 Å; 10^3 Å; 10^4 Å; 10^5 Å; 10^6 Å
	10 µm	linear
600 x 8 mm	5 µm	50 Å; 100 Å; 500 Å; 10^3 Å; 10^4 Å; 10^5 Å; 10^6 Å
	5 µm	linear
	10 µm	50 Å; 100 Å; 500 Å; 10^3 Å; 10^4 Å; 10^5 Å; 10^6 Å
	10 µm	linear
50 x 8 mm	5 µm	all porosities + linear
	10 µm	all porosities + linear

Microbore

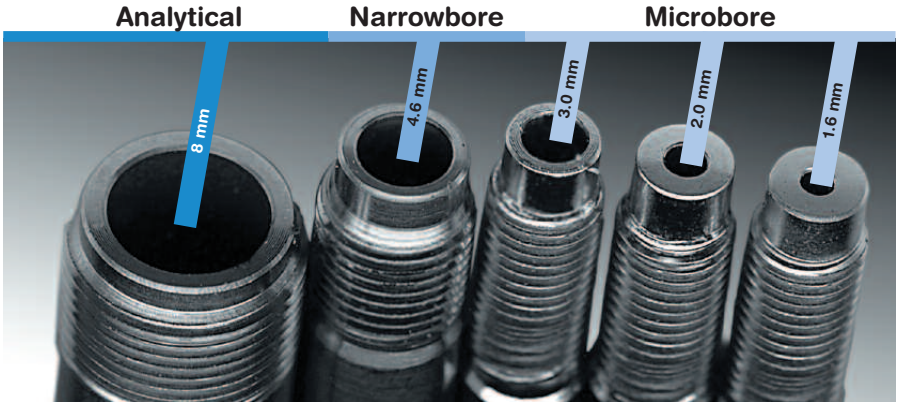
250 x 3 mm	5 µm	all porosities + linear
40 x 3 mm	5 µm	all porosities + linear
250 x 2 mm	5 µm	all porosities + linear
40 x 2 mm	5 µm	all porosities + linear

Narrowbore 4.6 mm ID (saving up to 70 % of solvent)

300 x 4.6 mm	3 µm	50 Å; 100 Å; 500 Å; 10^3 Å
	5 µm	50 Å; 100 Å; 500 Å; 10^3 Å; 10^4 Å; 10^5 Å; 10^6 Å
	5 µm	linear
40 x 4.6 mm	3 µm	50 Å; 100 Å; 500 Å; 10^3 Å
	5 µm	all porosities + linear
	10 µm	all porosities + linear

Preparative 20 mm ID

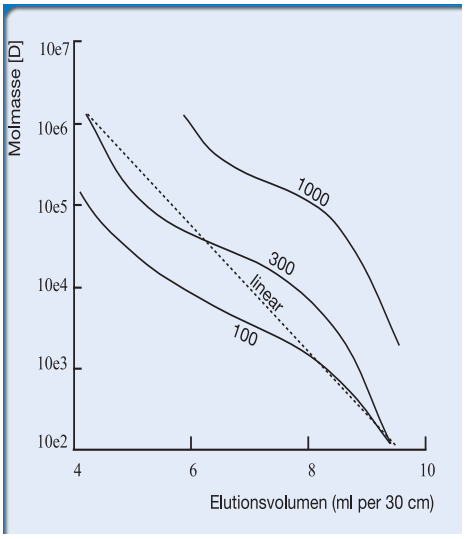
300 x 20 mm	10 µm	50 Å; 100 Å; 500 Å; 10^3 Å; 10^4 Å; 10^5 Å; 10^6 Å
	10 µm	linear
50 x 20 mm	10 µm	all porosities + linear



MZ Super-FG: SEC-Columns for Fluorinated Eluents

MZ Super-FG SEC-Columns are based on especially modified Silica. They are the ideal media for separations performed in fluorinated mobile phases like TFE or HFIP.

Technical Data	MZ-Gel Super FG
Particle Size	7 µm
Pressue Stability	max. 300 bar
Max. Flow Rate:	
Analytical 8 mm ID	3 ml/min
Preparative 20 mm ID	20 ml/min
Temperature Stability	max. 80 °C
pH-Stability	2 – 9
Pore Volume	0.6 – 1.0 ml/g



Porosity	Molecular Mass Range		Exclusion Limit
100	100 -	30.000	100.000
300	1.000 -	100.000	1.000.000
1000	20.000 -	1.000.000	10.000.000
4000	100.000 -	10.000.000	20.000.000
Linear	100 -	1.000.000	10.000.000

MZ-Super FG-columns are available as four different porosities, plus 1 linear mix. The table shows the molecular mass range and the exclusion limit.

Ordering information

Analytical		
300 x 8 mm	7 µm	all porosities
	7 µm	linear
600 x 8 mm	7 µm	all porosities
	7 µm	linear
50 x 8 mm	7 µm	all porosities
Preparative		
300 x 20 mm	7 µm	all porosities
	7 µm	linear
50 x 20 mm	7 µm	all porosities + linear

Part-No.

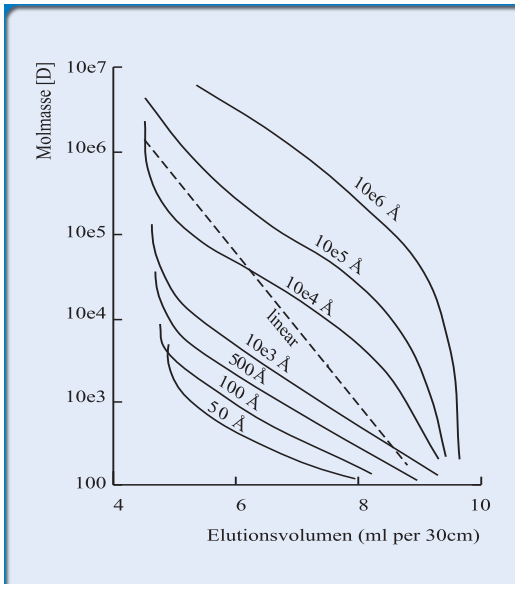
MZ CODE – LEN IDØ
CODE: four-digit Materialcode; LEN: length in mm; IDØ: ID in 1/10 mm

Example: MZ Super-FG linear 7 µm (9000);
SEC-Column 300 x 8.0 mm
=> Best.-Nr.: MZ9000-300080
Please inquire details for Refill-Service

Porosity	Code
100	9010
300	9030
1,000	9100
4,000	9400
Linear	9000

MZ-Gel SD*plus* LS - for Detection via Light Scattering

MZ-Gel SD*plus* LS is a proprietary development of MZ-Analysentechnik based on highly-crosslinked and totally porous high-performance styrene-divinyl-benzene copolymer. It is derived from **MZ-Gel SD*plus*** as base material by a special post-treatment to meet the special requirements of detection via light-scattering. **MZ-Gel SD*plus* LS** hence shows extremely low phase-bleeding plus the extraordinary capabilities like the HPLC-like separation efficiency of the well-known original material.



Molecular Mass Range & Exclusion Limit

Porosity	Molecular Mass Range			Exclusion Limit
50 Å		<	2,000	3,000
100 Å		<	3,000	5,000
500 Å		<	20,000	20,000
10e3 Å	1,000	-	40,000	70,000
10e4 Å	4,000	-	500,000	700,000
10e5 Å	10,000	-	2,000,000	4,000,000
10e6 Å	200,000	-	10,000,000	> 10,000,000
Linear	1,000	-	1,000,000	> 2,000,000

Materialcodes MZ-Gel SD*plus* LS

Porosity	3 µm	5 µm	10 µm
50 Å	5554	5556	5531
100 Å	5014	5016	5011
500 Å	5054	5056	5051
1,000 Å	5304	5306	5301
10^4 Å	-	5406	5401
10^5 Å	-	5506	5501
10^6 Å	-	5606	5601
Linear	-	5006	5001

Part-No.

MZ CODE – LEN IDØ

four-digit Materialcode; length in mm; ID in 1/10 mm

Example:

MZ-Gel SD*plus* LS 100 Å 5 µm (5016);
SEC-Column 300 x 8.0 mm

=> Part-no.: MZ5016-300080

Please inquire details for Refill-Service

Analytical 8 mm ID

Length x ID	Particle Size	Porosity
300 x 8 mm	3 µm	50 Å; 100 Å; 500 Å; 10^3 Å
	5 µm	50 Å; 100 Å; 500 Å; 10^3 Å; 10^4 Å; 10^5 Å; 10^6 Å
	5 µm	linear
	10 µm	50 Å; 100 Å; 500 Å; 10^3 Å; 10^4 Å; 10^5 Å; 10^6 Å
	10 µm	linear
600 x 8 mm	5 µm	50 Å; 100 Å; 500 Å; 10^3 Å; 10^4 Å; 10^5 Å; 10^6 Å
	5 µm	linear
	10 µm	50 Å; 100 Å; 500 Å; 10^3 Å; 10^4 Å; 10^5 Å; 10^6 Å
	10 µm	linear
50 x 8 mm	5 µm	all porosities + linear
	10 µm	all porosities + linear

Microbore

250 x 3 mm	5 µm	all porosities + linear
40 x 3 mm	5 µm	all porosities + linear
250 x 2 mm	5 µm	all porosities + linear
40 x 2 mm	5 µm	all porosities + linear

Narrowbore 4.6 mm ID (saving up to 70 % of solvent)

300 x 4,6 mm	3 µm	50 Å; 100 Å; 500 Å; 10^3 Å
	5 µm	50 Å; 100 Å; 500 Å; 10^3 Å; 10^4 Å; 10^5 Å; 10^6 Å
	5 µm	linear
40 x 4,6 mm	3 µm	50 Å; 100 Å; 500 Å; 10^3 Å
	5 µm	all porosities + linear
	10 µm	all porosities + linear

USP <621> COMPLETE LIST WITH COMPATIBLE PACKINGS

Introduction

This listing of HPLC packing media according to US Pharmacopoeia (USP) 621 is intended to assist our customers in finding an adequate, commercially available column for implementing a desired USP method. All columns in this list can directly be ordered via MZ-Analysentechnik. We are proud of being able to provide at least one adequate column for nearly each definition given in the USP list. Our focus is to provide information about easily and consistently obtainable HPLC-columns, rather than presenting all exotic materials – regardless of their availability. This ensures an uninterrupted, smooth workflow for our customers in case a replacement is needed.

Tolerances within USP-Specification

USP Chapter 621 names tolerable variations of method parameters for establishing a method from a monograph tha might be neccesary to meet system suitability testing (SST)-criteria, while still being still being conform within this method. Those so-called adjustments are variations of parameters in the specification, which can be made without need for revalidation of the method. Possible variations of parameters, which are still regarded as adjustment are presented in the following table. In any case, SST must be passed before using a desired method in your lab routine.

Parameter	Range for Adjustment*
Particle size:	- 50 %
Packing media:	free choice from the same category (Lxxx)
Column length:	± 70 %
Column inner diameter**:	± 25 %
Flow rate**:	± 50 %
Injection volume:	any
Column temperature:	± 10 °C
pH-value of mobile phase:	± 0,2 pH
Salt concentration of buffer/ buffer strength:	± 10 %

*changes in establishing a method out of this range are called „changes“ and require revalidation of the whole method additionally to SST

** according to USP 32-NF 27 column length and flow rate may be adjusted to the specific equipment as long as the linear flow rate is kept constant: „*Column Inner Diameter (HPLC): can be adjusted provided that the linear velocity is kept constant...*“

Use of Guard Columns

USP 621 enables the use of a guard column for direct implementation of a method without the need for revalidation – unless otherwise mentioned in the monograph and as long as the guard column follows the rules listed beside and as long as SST-critera are met.

Guard: Parameter	Requirement
Length:	≤ 15 % of the length of the analytical column
Inner diameter:	≤ inner diameter of the analytical column
Packing media:	same base material and bonded phase as analytical column

L1 *Octadecyl silane chemically bonded to porous or non-porous silica or ceramic micro-particles, 1.5 to 10 µm in diameter, or a monolithic rod.*

suggested packing	*manufacturer*	*properties / variations*
MZ-Aqua Perfect C18	*MZ-Analysentechnik*	120 Å, 310 m^2/g, 15% C, 3, 5, 7 & 10 µm, Endcapping, Si 99.999%, pH 2–8 200 Å, 220 m^2/g, 11% C, 3 & 5 µm, Endcapping, Si 99.999%, pH 2–8
Orbit 100 C18	*MZ-Analysentechnik*	100 Å, 340 m^2/g, 19% C, 3.5, 4, 5 & 10 µm, Endcapping, Si 99.999%, pH 2–8
PerfectBond ODS-H	*MZ-Analysentechnik*	120 Å, 170 m^2/g, 10% C, 3 & 5 µm, Endcapping, Si 99.999%, pH 2–8
PerfectBond ODS-HD	*MZ-Analysentechnik*	150 Å, 320 m^2/g, 18.5% C, 3 & 5 µm, Endcapping, Si 99.999%, pH 2–8
PerfectBond C18 ODS	*MZ-Analysentechnik*	125 Å, 300 m^2/g, 10% C, 5 µm, Endcapping, Si 99.999%, pH 2–8
PerfectBond C18	*MZ-Analysentechnik*	125 Å, 300 m^2/g, 10% C, 10 µm, Endcapping, Si 99.999%, pH 2–8
PerfectChrom 100 C18	*MZ-Analysentechnik*	100 Å, 350 m^2/g, 17% C, 3, 5, 10 & 15 µm, Endcapping, pH 2–8
PerfectChrom 100 C18L	*MZ-Analysentechnik*	100 Å, 350 m^2/g, 8.5% C, 5 & 10 µm, Endcapping, pH 2–8
PerfectChrom 100 C18M	*MZ-Analysentechnik*	100 Å, 350 m^2/g, 12% C, 5 µm, Endcapping, pH 2–8
PerfectChrom 100 C18AB	*MZ-Analysentechnik*	100 Å, 350 m^2/g, 5 µm, Endcapping
PerfectSil ODS-3	*MZ-Analysentechnik*	100 Å, 450 m^2/g, 15% C, 3, 4 & 5 µm, Endcapping, Si 99.999%, pH 2–8
PerfectSil 120 ODS	*MZ-Analysentechnik*	120 Å, 300 m^2/g, 15% C, 3, 5, 7 & 10 µm, Endcapping, Si 99.999%, pH 2–8
PerfectSil 120 ODS-L	*MZ-Analysentechnik*	120 Å, 300 m^2/g, 13% C, 3 & 5 µm, Endcapping, Si 99.999%, pH 2–8
PerfectSil 120 ODS-2	*MZ-Analysentechnik*	120 Å, 300 m^2/g, 17% C, 3 & 5 µm, Endcapping, Si 99.999%, pH 2–8
PerfectSil 300 ODS C18	*MZ-Analysentechnik*	300 Å, 100 m^2/g, 9% C, 5, 10 & 15-20 µm, Endcapping, Si 99.999%, pH 2–8
PerfectSil Target ODS-3	*MZ-Analysentechnik*	100 Å, 450 m^2/g, 17% C, 3, 5, 10 µm, Endcapping, Si 99.999%, pH 2–8
PerfectSil Target ODS-3 HD	*MZ-Analysentechnik*	100 Å, 450 m^2/g, 25% C, 3, 5, 10 µm, Endcapping, Si 99.999%, pH 2–11

L2 *Octadecylsilane chemically bonded to silica gel of a controlled surface porosity that has been bonded to a solid spherical core, 30 to 50 µm in diameter.*

suggested packing	*manufacturer*	*properties / variations*
- not available -		

L3 *Porous silica particles, 1.5 to 10 µm in diameter, or a monolithic silica rod..*

suggested packing	*manufacturer*	*properties / variations*
PerfectChrom 60 Sil	*MZ-Analysentechnik*	60 Å, 550 m^2/g, 5 & 10 µm
PerfectChrom 100 Sil	*MZ-Analysentechnik*	100 Å, 350 m^2/g, 5 & 10 µm
PerfectSil 100 Sil	*MZ-Analysentechnik*	100 Å, 450 m^2/g, 5 µm, Si 99.999%
PerfectSil 120 Sil	*MZ-Analysentechnik*	120 Å, 300 m^2/g, 5 & 10 µm, Si 99.999%
PerfectSil 300 Sil	*MZ-Analysentechnik*	300 Å, 100 m^2/g, 5, 10 & 15–20 µm, Si 99.999%
PerfectSil 1000 Sil	*MZ-Analysentechnik*	1000 Å, 5 µm, Si 99.999%
PerfectSil Target Sil 100	*MZ-Analysentechnik*	100 Å, 450 m^2/g, 3 & 5 µm, Si 99.999%

L4 *Silica gel of controlled surface porosity bonded to a solid spherical core, 30 to 50 µm in diameter.*

suggested packing	*manufacturer*	*properties / variations*
- none available -		

L5 *Alumina of controlled surface porosity bonded to a solid spherical core, 30 to 50 µm in diameter.*

suggested packing	*manufacturer*	*properties / variations*
- none available -		

L6-L10

L6 *Strong cation-exchange packing-sulfonated fluorocarbon polymer coated on a solid spherical core, 30 to 50 µm in diameter*

suggested packing	manufacturer	properties / variations
Adsorboshpere XL SCX	*Dr. Maisch*	-
Partisil SCX	*Hichrom*	-

L7 *Octylsilane chemically bonded to totally or superficially porous silica particles, 1.5 to 10 µm in diameter, or a monolithic silica rod.*

suggested packing	manufacturer	properties / variations
Orbit 100 C8	*MZ-Analysentechnik*	100 Å, 340 m^2/g, 12% C, 3.5, 5, 7 & 10 µm, Endcapping, Si 99.999%, pH 2–8
PerfectBond C8	*MZ-Analysentechnik*	125 Å, 300 m^2/g, 7% C, 5 µm, Endcapping, Si 99.999%, pH 2–8
PerfectBond C8-H	*MZ-Analysentechnik*	120 Å, 170 m^2/g, 6.5% C, 3 & 5 µm, Endcapping, Si 99.999%, pH 2–8
PerfectBond C8-HD	*MZ-Analysentechnik*	150 Å, 320 m^2/g, 10.5% C, 3 & 5 µm, Endcapping, Si 99.999%, pH 2–8
PerfectChrom 100 C8	*MZ-Analysentechnik*	100 Å, 350 m^2/g, 8% C, 3, 5 & 10 µm, Endcapping, Si 99.999%, pH 2–8
PerfectChrom 100 C8M	*MZ-Analysentechnik*	100 Å, 350 m^2/g, 6% C, 5 µm, Endcapping, Si 99.999%, pH 2–8
PerfectSil 100 C8-3	*MZ-Analysentechnik*	100 Å, 450 m^2/g, 9% C, 5 µm, Endcapping, Si 99.999%, pH 2–8
PerfectSil 120 C8	*MZ-Analysentechnik*	120 Å, 300 m^2/g, 11% C, 3, 5 & 10 µm, Endcapping, Si 99.999%, pH 2–8
PerfectSil 300 C8	*MZ-Analysentechnik*	300 Å, 100 m^2/g, 5% C, 5, 10 & 15–20 µm, Endcapping, Si 99.999%, pH 2–8
PerfectSil Target C8-3	*MZ-Analysentechnik*	100 Å, 450 m^2/g, 9% C, 3 & 5 µm, Endcapping, Si 99.999%, pH 2–8
PerfectSil Target C8 HD	*MZ-Analysentechnik*	100 Å, 450 m^2/g, 15% C, 3 & 5 µm, Endcapping, Si 99.999%, pH 2–11

L8 *An essentially monomolecular layer of aminopropylsilane chemically bonded to totally porous silica gel support, 1.5 to 10 µm in diameter, or a monolithic silica rod..*

suggested packing	manufacturer	properties / variations
PerfectChrom 100 NH2	*MZ-Analysentechnik*	100 Å, 350 m^2/g, 3.5% C, 5 & 10 µm
PerfectSil 100 NH2	*MZ-Analysentechnik*	100 Å, 450 m^2/g, 8% C, 5 µm, Si 99.999%, pH 2–8
PerfectSil 120 NH2	*MZ-Analysentechnik*	120 Å, 300 m^2/g, 4% C, 3, 4 & 5 µm, Si 99.999%, pH 2–8

L9 *Irregular or spherical, totally porous silica gel having a chemically bonded, strongly acidic cation-exchange coating, 3 to 10 µm in diameter.*

suggested packing	manufacturer	properties / variations
Capcell Pak SCX UG 80	*Shiseido*	80 Å, 450 m^2/g, 9% C, 5 µm, Polymer coating, high purity silica, pH 2–7
Chromegabond RP-SCX	*ES Industries*	60 Å, 5 µm
HP-SCX	*Sepax Techonologies*	120 Å, 300 m^2/g, 11% C, 1.8, 2.2, 3, 4, 5, 7 & 10 µm, Endcapping, high purity silica, pH 1.5–8
Partisil SCX	*Hichrom*	85 Å, 350 m^2/g, 10% C, 5 & 10 µm, pH 1.5–7
Partisphere SCX	*Hichrom*	120 Å, 160 m^2/g, 5 µm, pH 1.5–7
Spherisorb SCX	*Waters*	80 Å, 220 m^2/g, 4% C, 5 & 10 µm, pH 2–8

L10-L15

L10 Nitrile groups chemically bonded to porous silica particles, 1.5 to 10 µm in diameter, or a monolithic silica rod..

suggested packing	manufacturer	properties / variations
Orbit 100 CN	*MZ-Analysentechnik*	100 Å, 340 m^2/g, 6.5% C, 3.5 & 5 µm, Si 99.999%, pH 2–8
PerfectChrom 100 CN	*MZ-Analysentechnik*	100 Å, 350 m^2/g, 6% C, 5, 7 & 10 µm, pH 2–8
PerfectSil 100 CN-3	*MZ-Analysentechnik*	100 Å, 450 m^2/g, 4% C, 5 µm, Si 99.999%, pH 2–8
PerfectSil 120 CN	*MZ-Analysentechnik*	120 Å, 300 m^2/g, 7.5% C, 3 & 5 µm, Si 99.999%, pH 2–8
PerfectSil Target CN-3	*MZ-Analysentechnik*	100 Å, 450 m^2/g, 7% C, 5 µm, Si 99.999%, pH 2–8

L11 Phenyl groups chemically bonded to porous silica particles, 1.5 to 10 µm in diameter, or a monolithic silica rod.

suggested packing	manufacturer	properties / variations
PerfectBond Ph	*MZ-Analysentechnik*	120 Å, 200 m^2/g, 6% C, 5 µm, Endcapping, Si 99.999%, pH 2–8
PerfectBond Ph-H	*MZ-Analysentechnik*	120 Å, 170 m^2/g, 5% C, 5 µm, Endcapping, Si 99.999%, pH 2–8
PerfectChrom 100 Phenyl	*MZ-Analysentechnik*	100 Å, 350 m^2/g, 8.5% C, 5 & 10 µm, pH 2–8
PerfectChrom 100 Phenyl-M	*MZ-Analysentechnik*	100 Å, 350 m^2/g, 8.5% C, 5 & 10 µm, pH 2–8
PerfectSil 100 Phenyl-3	*MZ-Analysentechnik*	100 Å, 450 m^2/g, 9.5% C, 5 µm, Endcapping, Si 99.999%, pH 2–8
PerfectSil 120 Phenyl	*MZ-Analysentechnik*	120 Å, 300 m^2/g, 9.5% C, 3 & 5 µm, Endcapping, Si 99.999%, pH 2–8
PerfectSil 120 Phenyl-M	*MZ-Analysentechnik*	120 Å, 300 m^2/g, 6% C, 5 µm,Endcapping, Si 99.999%, pH 2–8

L12 A strong anion-exchange packing made by chemically bonding a quaternary amine to a solid silica spherical core, 30 to 50 µm in diameter.

suggested packing	manufacturer	properties / variations
- none available -		

L13 Trimethylsilane chemically bonded to porous silica particles, 3 to 10 µm in diameter.

suggested packing	manufacturer	properties / variations
PerfectBond C1	*MZ-Analysentechnik*	120 Å, 170 m^2/g, 5.0% C, 3 & 5 µm, Si 99.999%, pH 2–8
PerfectChrom 100 C1	*MZ-Analysentechnik*	100 Å, 350 m^2/g, 4% C, 5 µm, pH 2–8
PerfectSil 120 C1	*MZ-Analysentechnik*	120 Å, 300 m^2/g, 5.0% C, 3 & 5 µm, Si 99.999%, pH 2–8

L14 Silica gel having a chemicallly bonded strongly basic quaternary ammonium anion-exchange coating, 5 to 10 µm in diameter.

suggested packing	manufacturer	properties / variations
Chromegabond SAX	*ES Industries*	60 Å, 5 µm
Partisil SAX	*Hichrom*	85 Å, 350 m^2/g, 10% C, 5 & 10 µm, pH 1.5–7.5
Partisphere SAX	*Hichrom*	120 Å, 160 m^2/g, 5 µm, pH 1.5–7.5
Spherisorb SAX	*Waters*	80 Å, 220 m^2/g, 4% C, 5 & 10 µm, pH 2–8
SUPELCOSIL SAX1	*Supelco*	120 Å, 170 m^2/g, 12% C, 5 µm
TSKgel QAE-2SW	*Tosoh Bioscience*	125 Å, 5 µm, pH 2–7.5

L15 Hexylsilane chemically bonded to totally porous silica particles, 3 to 10 µm in diameter.

suggested packing	manufacturer	properties / variations
PerfectChrom 100 C6	*MZ-Analysentechnik*	100 Å, 350 m^2/g, 7% C, 5 µm, Endcapping, pH 2–8

L16 Dimethylsilane chemically bonded to porous silica particles, 5 to 10 µm in diameter.

suggested packing	manufacturer	properties / variations
Chromegabond C2	*ES Industries*	60 Å, 480 m^2/g, 5 & 10 µm, No Endcapping
Nucleosil C2	*Macherey-Nagel*	100 Å, 350 m^2/g, 3.5% C, 7 µm, pH 2–8

L17 Strong cation-exchange resin consisting of sulfonated cross-linked styrene-divinylbenzene copolymer in the hydrogen form, 6 to 12 µm in diameter.

suggested packing	manufacturer	properties / variations
Carbomix H-NP5	*Sepax*	5 µm, cross linkage 8%, pH 1–3, T_{max} = 85 °C
Carbomix H-NP10	*Sepax*	10 µm, cross linkage 5, 8 & 10%, pH 1–3, T_{max} = 85 °C
Hi-Plex H	*Agilent Technologies*	8 µm, cross linkage 8%, T_{max} = 60–70 °C
IC-Pak Cation	*Waters*	10 µm, pH 1–12, T_{max} = 50 °C
IC-Pak Ion Exclusion	*Waters*	7 µm
ICSep COREGEL 64H	*Transgenomic*	10 µm, cross linkage 6.4%, pH 0–14, T_{max} = 90 °C
ICSep COREGEL 87H1	*Transgenomic*	9 µm, cross linkage 8%, pH 0–14, T_{max} = 90 °C
ICSep COREGEL 87H3	*Transgenomic*	9 µm, cross linkage 8%, pH 0–14, T_{max} = 90 °C
ICSep COREGEL 107H	*Transgenomic*	8 µm, cross linkage 10%, pH 0–14, T_{max} = 90 °C
ICSep ION300	*Transgenomic*	7 µm, cross linkage 6%, pH 0–14, T_{max} = 90 °C
ICSep ORH-801	*Transgenomic*	9 µm, cross linkage 7%, pH 0–14, T_{max} = 90 °C
MCI GEL CK08EH	*Mitsubishi Chemical*	9 µm, cross linkage 8%, pH 1–7
Shim-pack SCR-101H	*Shimadzu*	10 µm
Shodex IC Y-521	*Shodex*	12 µm, T_{max} = 70 °C
Shodex RSpak KC-811	*Shodex*	6 µm, T_{max} = 85 °C
Shodex SUGAR SH1011	*Shodex*	6 µm, pH 2–7, T_{max} = 95 °C
Shodex SUGAR SH1821	*Shodex*	6 µm, pH 2–7, T_{max} = 95 °C

L18 Amino and cyano groups chemically bonded to porous silica particles, 3 to 10 µm in diameter.

suggested packing	manufacturer	properties / variations
Chromegabond A/CN	*ES Industries*	60 Å, 375 m^2/g, 5 & 10 µm
Partisil 10 PAC	*Hichrom*	85 Å, 350 m^2/g, 5 & 10 µm
Partisphere PAC	*Hichrom*	120 Å, 160 m^2/g, 5 µm

L19 Strong cation-exchange resin consisting of sulfonated cross-linked styrene-divinylbenzene copolymer in the calcium form, 5–15 µm in diameter.

suggested packing	manufacturer	properties / variations
Carbomix Ca-NP5	*Sepax*	5 µm, cross linkage 8%, pH 5–9, T_{max} = 85 °C
Carbomix Ca-NP10	*Sepax*	10 µm, cross linkage 5, 8 & 10%, pH 5–9, T_{max} = 85 °C
CarboSep CHO-620	*Transgenomic*	10 µm, cross linkage 6%, T_{max} = 95 °C
CarboSep CHO-820	*Transgenomic*	9 µm, cross linkage 8%, T_{max} = 95 °C
CarboSep COREGEL-87C	*Transgenomic*	9 µm, cross linkage 8%, T_{max} = 95 °C
CarboSep L19	*Transgenomic*	8 µm, cross linkage 8%, T_{max} = 95 °C

L19 CONTINUED

Hi-Plex Ca	*Agilent Technologies*	8 µm, cross linkage 8%, T_{max} = 80–90 °C
MCI GEL CK08EC	*Mitsubishi Chemical*	9 µm, cross linkage 8%, pH 1–7
Shodex SUGAR SC1011	*Shodex*	6 µm, pH 3–7, T_{max} = 95 °C
Shodex SUGAR SC1211	*Shodex*	6 µm, pH 3–7, T_{max} = 95 °C
Shodex SUGAR SC1821	*Shodex*	6 µm, pH 3–7, T_{max} = 95 °C
Shodex USPpak MN-431	*Shodex*	8 µm, T_{max} = 85 °C

L20 *Dihydroxypropane groups chemically bonded to porous silica or hybrid particles, 1.5 to 10 µm in diameter, or a monolithic silica rod.*

suggested packing	*manufacturer*	*properties / variations*
PerfectChrom 100 Diol	*MZ-Analysentechnik*	100 Å, 350 m^2/g, 5% C, 5 & 10 µm, pH 2–8
PerfectSil 100 Diol	*MZ-Analysentechnik*	100 Å, 450 m^2/g, 5 µm, Si 99.999%, pH 2–8
PerfectSil 300 Diol	*MZ-Analysentechnik*	300 Å, 100 m^2/g, 5% C, 5 µm, Si 99.999%, pH 2–8

L21 *A rigid, spherical styrene-divinylbenzene copolymer, 3 to 30 µm in diameter.*

suggested packing	*manufacturer*	*properties / variations*
MCI GEL CHP20/C04	*Mitsubishi Chemical*	4 µm, pH 1–14
MCI GEL CHP20/C10	*Mitsubishi Chemical*	10 µm, pH 1–14
PLRP-S 100A	*Agilent Technologies*	100 Å, 3, 5, 8, 10, 10–15, 15–20, 30 & 50 µm, pH 1–14, T_{max} = 200 °C
PLRP-S 1000A	*Agilent Technologies*	1000 Å, 5, 8, 10, 30 & 50 µm, pH 1–14, T_{max} = 200 °C
PLRP-S 300A	*Agilent Technologies*	300 Å, 3, 5, 8, 10, 10–15, 15–20 & 50 µm, pH 1–14, T_{max} = 200 °C
PLRP-S 4000A	*Agilent Technologies*	4000 Å, 5, 8, 10 & 30 µm, pH 1–14, T_{max} = 200 °C
PolyRP	*Sepax*	100, 300, 500 & 1000 Å, 5 & 10 µm, pH 1–14, T_{max} = 200 °C
Shodex RSpak DS-413	*Shodex*	200 Å, 3.5 µm, pH 1–13, T_{max} = 50 °C
Shodex RSpak DS-613	*Shodex*	200 Å, 6 µm, pH 1–12, T_{max} = 80 °C
Shodex RSpak RP18-415	*Shodex*	450 Å, 6 µm, pH 1–13, T_{max} = 50 °C
TSKgel Hxl and Hhr	*Tosoh Bioscience*	15 – >650 Å and mixed bed, 5, 9 &13 µm, pH 1–14, T_{max} = 60–220 °C
TSKgel SuperH	*Tosoh Bioscience*	15 – >650 Å and mixed bed, 3 & 5 µm, pH 1–14, T_{max} = 140 °C
TSKgel SuperHZ	*Tosoh Bioscience*	15–200 Å and mixed bed, 3, 5 & 10 µm, pH 1–14, T_{max} = 60–80 °C
TSKgel SuperMultiporeHZ.	*Tosoh Bioscience*	80 – >140 Å, 3, 4 & 6 µm, pH 1–14, T_{max} = 60 °C

L22 *A cation-exchange resin made of porous polystyrene gel with sulfonic acid groups, 5–15 µm in diameter.*

suggested packing	*manufacturer*	*properties / variations*
CarboSep CH0-620	*Transgenomic*	10 µm, cross linkage 6%, T_{max} = 95 °C
CarboSep COREGEL 87C	*Transgenomic*	9 µm, cross linkage 8%, T_{max} = 95 °C
Hi-Plex H	*Agilent Technologies*	8 µm, cross linkage 8%, T_{max} = 60–70 °C
ICSep COREGEL 64H	*Transgenomic*	10 µm, cross linkage 6.4%, pH 0–14, T_{max} = 90 °C
ICSep COREGEL 87H1	*Transgenomic*	9 µm, cross linkage 8%, pH 0–14, T_{max} = 90 °C
ICSep COREGEL 87H3	*Transgenomic*	9 µm, cross linkage 8%, pH 0–14, T_{max} = 90 °C
ICSep COREGEL 107H	*Transgenomic*	8 µm, cross linkage 10%, pH 0–14, T_{max} = 90 °C
ICSep ORH801	*Transgenomic*	9 µm, cross linkage 7%, pH 0–14, T_{max} = 90 °C
Proteomix SCX-POR	*Sepax*	10 µm, 500 Å, pH 2–12, T_{max} = 80 °C

L22 CONTINUED

Shodex SUGAR SC1011	*Shodex*	6 µm, pH 3–7, T_{max} = 95 °C
TSKgel SCX	*Tosoh Bioscience*	5 µm, 60 Å, pH 1–14

L23 *An anion-exchange resin made of porous polymethacrylate or polyacrylate gel with quartenary ammonium groups, 7–12 µm in size.*

suggested packing	*manufacturer*	*properties / variations*
MCI GEL CQA31S	*Mitsubishi Chemical*	600 Å, 10 µm, pH 2–12
Shodex IEC QA-825	*Shodex*	5000 Å, 12 µm, pH 2–12, T_{max} = 50 °C
TSKgel Q-STAT	*Tosoh Bioscience*	Non-porous, 7 & 10 µm, pH 3–10
TSKgel DNA-STAT	*Tosoh Bioscience*	Non-porous, 5 µm, pH 3–10
TSKgel SuperQ-5PW	*Tosoh Bioscience*	1000 Å, 10 & 13 µm, pH 2–12
TSKgel BioAssist Q	*Tosoh Bioscience*	4000 Å, 10 & 13 µm, pH 2–12
TSKgel IC-Anion-PW	*Tosoh Bioscience*	10 µm, pH 2–12

L24 *Polyvinylalcohol chemically bonded to porous silica particles, 5 µm in diameter.*

suggested packing	*manufacturer*	*properties / variations*
YMC-Pack PVA-Sil	*YMC*	120 Å, 5 µm, pH 2–9.5, T_{max} = 50 °C

L25 *Packing having the capacity to separate compounds with a molecular weight range from 100-5000 (as determined by polyethylene oxide), applied to neutral, anionic, and cationic water-soluble polymers. A polymethacrylate resin base, cross-linked with polyhydroxylated ether (surface contained some residual carboxyl functional groups) was found suitable.*

suggested packing	*manufacturer*	*properties / variations*
MCI GEL CQP06	*Mitsubishei Chemical*	120 Å, 10 µm, pH 2–12
Shodex OHpak SB-802HQ	*Shodex*	100 Å, 8 µm, pH 3–10, T_{max} = 70 °C
Shodex OHpak SB-802.5HQ	*Shodex*	200 Å, 9 µm, pH 3–10, T_{max} = 70 °C
TSKgel G2000PW	*Tosoh Bioscience*	25 Å, 12 µm, 1pH 2–12, T_{max} = 80 °C
TSKgel G2500PW	*Tosoh Bioscience*	< 200 Å, 12 & 17 µm, pH 2–12, T_{max} = 80 °C
TSKgel G2500PWxl	*Tosoh Bioscience*	< 200 Å, 7 µm, pH 2–12, T_{max} = 80 °C
Ultrahydrogel DP, +120	*Waters*	120 Å, 6 µm, pH 2–12, T_{max} = 80 °C

L26 *Butyl silane chemically bonded to totally porous or superficially porous silica particles, 1.5 to 10 µm in diameter.*

suggested packing	*manufacturer*	*properties / variations*
Orbit 100 C4	*MZ-Analysentechnik*	100 Å, 340 m^2/g, 7% C, 3.5, 5 & 10 µm, Endcapping, Si 99.999%, pH 2–8
PerfectChrom 100 C4	*MZ-Analysentechnik*	100 Å, 350 m^2/g, 6% C, 5 µm, Endcapping, pH 2–8
PerfectSil 120 C4	*MZ-Analysentechnik*	120 Å, 300 m^2/g, 8% C, 3 & 5 µm, Endcapping, Si 99.999%, pH 2–8
PerfectSil 300 C4	*MZ-Analysentechnik*	300 Å, 100 m^2/g, 3% C, 5, 10 & 15–20 µm, Endcapping, Si 99.999%, pH 2–8

L27 *Porous silica particles, 30 to 50 µm in diameter.*

suggested packing	*manufacturer*	*properties / variations*
PerfectBond Si	*MZ-Analysentechnik*	100 Å, 320 m^2/g, 30–50 µm, Si 99.999%

L28-L33

L28 A multifunctional support, which consists of a high purity, 100 Å, spherical silica substrate that has been bonded with anionic exchanger, amine functionality in addition to a conventional reversed phase C8 functionality.

suggested packing	manufacturer	properties / variations
Generik C8/Amino	*Sepax*	60 Å, 550 m^2/g, 20–40 & 40–60 µm, high purity silica
ProTec C8	*ES Industries*	100 Å, 250 m^2/g, 5% C, 5 µm, pH 2–8

L29 Gamma alumina, reverse-phase, low carbon percentage by weight, alumina-based polybutadiene spherical particles, 5 µm in diameter with a pore ~~volume~~ [diameter] of 80 Å.

suggested packing	manufacturer	properties / variations
GammaBond ARP1	*ES Industries*	80 Å, 5 µm, pH 1.3–12

L30 Ethyl silane chemically bonded to totally porous silica particles, 3 to 10 µm in diameter.

suggested packing	manufacturer	properties / variations
Chromegabond C2-E	*ES Industries*	60 Å, 220 m^2/g, 5 & 10 µm
GP-C2	*Sepax*	120 Å, 300 m^2/g, 3, 4, 5, 7 & 10 µm

L31 A hydroxide-selective, strong anion-exchange resin-quaternary amine bonded on latex particles attached to a core of 8.5 µm macroporous particles having a pore size of 2000 Å units and consisting of ethylvinylbenzene cross-linked with 55% divinylbenzene.

suggested packing	manufacturer	properties / variations
MCI Gel SCA04	*Mitsubishi Chemical*	5 µm, pH 3–7

L32 A chiral ligand-exchange resin packing-L-proline copper complex covalently bonded to irregularly shaped silica particles, 5 to 10 µm in diameter.

suggested packing	manufacturer	properties / variations
CHIRALPAK WH	*Chiral Technologies*	10 µm, T_{max} = 50 °C

L33 Packing having the capacity to separate dextrans by molecular size over a range of 4,000–500,000 Da. It is spherical, silica-based, and processed to provide pH stability.

suggested packing	manufacturer	properties / variations
BioBasic SEC 120	*Thermo Scientific*	120 Å, 5 µm, pH 2–8
BioBasic SEC 300	*Thermo Scientific*	300 Å, 5 µm, pH 2–8
BioBasic SEC 1000	*Thermo Scientific*	1000 Å, 5 µm, pH 2–8
Nanofilm SEC-150	*Sepax*	150 Å, 5 µm, pH 2–8.5, T_{max} = 80 °C
Nanofilm SEC-250	*Sepax*	250 Å, 5 µm, pH 2–8.5, T_{max} = 80 °C
Nanofilm SEC-500	*Sepax*	450 Å, 5 µm, pH 2–8.5, T_{max} = 80 °C
SRT SEC-100	*Sepax*	100 Å, 5 µm, pH 2–8.5, T_{max} = 80 °C
SRT SEC-150	*Sepax*	150 Å, 5 µm, pH 2–8.5, T_{max} = 80 °C
SRT SEC-300	*Sepax*	300 Å, 5 µm, pH 2–8.5, T_{max} = 80 °C
SRT SEC-500	*Sepax*	500 Å, 5 µm, pH 2–8.5, T_{max} = 80 °C
SRT SEC-1000	*Sepax*	1000 Å, 5 µm, pH 2–8.5, T_{max} = 80 °C

L33 CONTINUED

Shodex PROTEIN KW-800	*Shodex*	400, 1000 & 1500 Å, 5 & 7 µm, pH 3–7.5, T_{max} = 45 °C
Shodex KW400	*Shodex*	400, 800, 1500 & 2000 Å, 3 & 5 µm, pH 3–7.5, T_{max} = 45 °C
TSKgel UP-SW	*Tosoh Bioscience*	250 Å, 2 µm, pH 2.5–7.5, T_{max} = 30 °C
TSKgel SuperSW	*Tosoh Bioscience*	125 & 250 Å, 3 & 4 µm, pH 2.5–7.5, T_{max} = 30 °C
TSKgel SWxl	*Tosoh Bioscience*	125, 250 & 450 Å, 5 & 8 µm, pH 2.5–7.5, T_{max} = 30 °C
TSKgel QC-PAK GFC	*Tosoh Bioscience*	125 & 250 Å, 5 µm, pH 2.5–7.5, T_{max} = 30 °C
TSKgel SW	*Tosoh Bioscience*	125, 250 & 450 Å, 10, 13 & 17 µm, pH 2.5–7.5, T_{max} = 30 °C

L34 *Strong cation-exchange resin consisting of sulfonated cross-linked styrene-divinylbenzene copolymer in the lead form, 7 to 9 µm in diameter.*

suggested packing	*manufacturer*	*properties / variations*
CARBOSep COREGEL-87P	*Transgenomic*	9 µm, cross linkage 8%, T_{max} = 95 °C
CARBOSep CHO682	*Transgenomic*	7 µm, cross linkage 6%, T_{max} = 95 °C
Hi-Plex Pb	*Agilent Technologies*	8 µm, cross linkage 8%, T_{max} = 70–90 °C
Shodex SUGAR SP0810	*Shodex*	7 µm, pH 3–7, T_{max} = 95 °C

L35 *A zirconium-stabilized spherical silica packing with a hydrophilic (diol-type) molecular monolayer bonded phase having a pore size of 150 Å.*

suggested packing	*manufacturer*	*properties / variations*
Zorbax GF-250	*Agilent Technologies*	150 Å, 140 m^2/g, 4 µm, pH 3–8, T_{max} = 40 °C
Zorbax GF-450	*Agilent Technologies*	300 Å, 50 m^2/g, 6 µm, pH 3–8, T_{max} = 40 °C

L36 *A 3,5-dinitrobenzoyl derivative of L-phenylglycine covalently bonded to 5 µm aminopropyl silica.*

suggested packing	*manufacturer*	*properties / variations*
Nucleosil Chiral-3	*Macherey-Nagel*	100 Å, 350 m^2/g, 5 µm

L37 *Packing having the capacity to separate proteins by molecular size over a range of 2,000 to 40,000 Da. It is a polymethacrylate gel.*

suggested packing	*manufacturer*	*properties / variations*
MCI GEL CQP30	*Mitsubishi Chemical*	600 Å, 10 µm, pH 2–12
Ultrahydrogel 250	*Waters*	250 Å, 6 µm, pH 2–12, T_{max} = 80 °C
Shodex OHpak SB-803 HQ	*Shodex*	800 Å, 9 µm, pH 3–10, T_{max} = 70 °C
TSKgel G3000PWxl-CP	*Tosoh Bioscience*	200 Å, 7 µm, pH 2–12, T_{max} = 80 °C
TSKgel G3000PWxl	*Tosoh Bioscience*	200 Å, 7 µm, pH 2–12, T_{max} = 80 °C
TSKgel G3000PW	*Tosoh Bioscience*	200 Å, 12 & 17 µm, pH 2–12, T_{max} = 80 °C

L38 *A methacrylate-based size-exclusion packing for water-soluble samples.*

suggested packing	*manufacturer*	*properties / variations*
MCI GEL CQP10	*Mitsubishi Chemical*	200 Å, 10 µm, pH 2–12
MCI GEL CQP30	*Mitsubishi Chemical*	600 Å, 10 µm, pH 2–12
Shodex OHpak SB-800HQ	*Shodex*	100, 200, 800, 2.000, 7.000, 15.000 & 30.000 Å, 8, 9, 10, 13 & 35 µm, pH 3–10, T_{max} = 60–70 °C

L38 CONTINUED

TSKgel PW	*Tosoh Bioscience*	125, 200, 500, 1.000 & >1.000 Å, 12 & 17 µm, pH 2–12, T_{max} = 50–80 °C
TSKgel PWxl	*Tosoh Bioscience*	200, 500, 1.000 & >1.000 Å, 3, 7, 10 & 13 µm, pH 2–12, T_{max} = 50–80 °C
TSKgel PWxl-CP	*Tosoh Bioscience*	200, 1.000 & >1.000 Å, 7, 10 & 13 µm, pH 2–12, T_{max} = 50–80 °C
TSKgel SuperMultiporePW	*Tosoh Bioscience*	200, 1.000 & >1.000 Å, 4, 5 & 8 µm, pH 2–12, T_{max} = 80 °C
TSKgel Alpha	*Tosoh Bioscience*	25, 150, 450, 1.000 & >1.000 Å, 7, 10 & 13 µm, pH 2–12, T_{max} = 80 °C
TSKgel SuperAW	*Tosoh Bioscience*	25, 150, 450, 1.000 & >1.000 Å, 4, 6, 7 & 9 µm, pH 2–12, T_{max} = 80 °C

L39 A hydrophilic polyhydroxymethacrylate gel of totally porous spherical resin.

suggested packing	manufacturer	properties / variations
MCI GEL CMG20/C04	*Mitsubishi Chemical*	4 µm, pH 2–12
MCI GEL CMG20/C10	*Mitsubishi Chemical*	10 µm, pH 2–12
Shodex OHpak SB-800HQ	*Shodex*	100, 200, 800, 2.000, 7.000, 15.000 & 30.000 Å, 8, 9, 10, 13 & 35 µm, pH 3–10, T_{max} = 60–70 °C
Shodex ODP2 HP	*Shodex*	40 Å, 5 µm, pH 3–12, T_{max} = 60 °C
Shodex RSpak DM-614	*Shodex*	200 Å, 10 µm, pH 2–10, T_{max} = 60 °C
TSKgel PW	*Tosoh Bioscience*	125, 200, 500, 1000 & >1000 Å, 12 & 17 µm, pH 2–12, T_{max} = 50–80 °C
TSKgel PWxl	*Tosoh Bioscience*	200, 500, 1000 & >1000 Å, 3, 7, 10 & 13 µm, pH 2–12, T_{max} = 50–80 °C
TSKgel PWxl-C	*Tosoh Bioscience*	200, 1000 & >1000 Å, 7, 10 & 13 µm, pH 2–12, T_{max} = 50–80 °C
TSKgel Alpha	*Tosoh Bioscience*	25, 150, 450, 1000 & >1000 Å, 7, 10 & 13 µm, pH 2–12, T_{max} = 80 °C
TSKgel SuperAW series	*Tosoh Bioscience*	25, 150, 450, 1000 & >1000 Å, 4, 6, 7 & 9 µm, pH 2–12, T_{max} = 80 °C

L40 Cellulose tris-3,5-dimethylphenylcarbamate coated porous silica particles, 3 µm to 20 µm in diameter.

suggested packing	manufacturer	properties / variations
CHIRALCEL OD	*Daicel/Chiral Technologies*	10 µm, pH 2–9, T_{max} = 40 °C
CHIRALCEL OD-H	*Daicel/Chiral Technologies*	5 µm, pH 2–9, T_{max} = 40 °C
Kromasil CelluCoat	*Akzo Nobel Separations*	3, 5, 10 & 25 µm

L41 Immobilized α_1-acid glycoprotein on spherical silica particles, 5 µm in diameter.

suggested packing	manufacturer	properties / variations
CHIRAL-AGP	*Daicel/Chiral Technologies*	5 µm, pH 4–7, T_{max} = 30 °C

L42 Octylsilane and octadecylsilane groups chemically bonded to porous silica particles, 5 µm in diameter.

suggested packing	manufacturer	properties / variations
Chromegabond PSC	*ES Industries*	100 Å, 350 m^2/g, 14% C, 3 & 5 µm, pH 2–8
Hichrom RPB	*HiChrom*	110 Å, 340 m^2/g, 14% C, 3.5, 5 & 10 µm, Endcapping, high purity silica

L43 Pentafluorophenyl groups chemically bonded to silica particles by a propyl spacer, 1.5 to 10 µm in diameter.

suggested packing	manufacturer	properties / variations
Discovery HS F5	*Supelco*	120 Å, 300 m^2/g, 3, 5 & 10 µm, 12% C, pH 2–8
HALO PFP	*Advanced Materials Tech.*	90 Å, 120 m^2/g, 5.3% C, 2 µm, pH 2–9 90 Å, 135 m^2/g, 5.5% C, 2.7 µm, pH 2–9 90 Å, 90 m^2/g, 3.9% C, 5 µm, pH 2–9
Sunniest PFP	*ChromaNik Technologies*	120 Å, 340 m^2/g, 10% C, 5 µm, pH 2–8
SunShell PFP	*ChromaNik Technologies*	90 Å, 150 m^2/g, 4.5% C, 2.6 µm, pH 2–8

L44-L49

L44 A multifunctional support, which consists of a high purity, 60 Å, spherical silica substrate that has been bonded with a cationic exchanger, sulfonic acid functionality in addition to a convention reversed phase C8 functionality.

suggested packing	manufacturer	properties / variations
Chromegabond RP-SCX	*ES Industries*	5 µm, 60 Å
Generik C8/SCX	*Sepax Technologies.*	60 Å, 550 m^2/g, 20–40 & 40–60 µm, high purity silica

L45 Beta cyclodextrin, R,S-hydroxypropyl ether derivative, bonded to porous silica particles, 3 to 10 µm in diameter.

suggested packing	manufacturer	properties / variations
ChiraDex	*Merck*	100 Å, 300–360 m^2/g, 5 µm, pH 3–7.5
Ultron ES-CD	*Shinwa*	5 µm
Ultron ES-PhCD	*Shinwa*	5 µm

L46 Polystyrene/divinylbenzene substrate agglomerated with quaternary amine funcionalized latex beads, about 9 µm to 11 µm in diameter.

suggested packing	manufacturer	properties / variations
ICSep AN1	*Transgenomic*	pH 0–14

L47 High capacity anion-exchange microporous substrate, fully functionalized with a trimethylamine group, 8 µm in diameter.

suggested packing	manufacturer	properties / variations
CarboPac MA1	*Dionex*	7.5 µm, cross linkage 15%, pH 0–14, T_{max} = 60 °C
Hamilton PRP-X100	*Hamilton*	100 Å, 5 & 10 µm, pH 1–13, T_{max} = 30–60 °C
Hamilton PRP-X110	*Hamilton*	100 Å, 7 µm, pH 1–13, T_{max} = 30–60 °C
Hamilton RCX-10	*Hamilton*	100 Å, 7 µm
Hamilton RCX-30	*Hamilton*	100 Å, 7 µm
MCI GEL CQA35S	*Mitsubishi Chemical*	10 µm, pH 2–12

L48 Sulfonated, cross-linked polystyrene with an outer layer of submicron, porous, anion-exchange microbeads, 5 to 15 µm in diameter.

suggested packing	manufacturer	properties / variations
Dionex IonPac AG5	*Thermo Scientific*	Guard Column for IonPac AS5 (50 mm length)
Dionex IonPac AG7	*Thermo Scientific*	Guard Column for IonPac AS7 (50 mm length)
Dionex IonPac AS5	*Thermo Scientific*	15 µm, cross linkage 2%, pH 0–14
Dionex IonPac AS7	*Thermo Scientific*	10 µm, cross linkage 2%, pH 0–14

L49 A reversed-phase packing made by coating a thin layer of polybutadiene onto spherical porous zirconia particles, 3 to 10 µm in diameter.

suggested packing	manufacturer	properties / variations
ZirChrom PBD	*ZirChrom*	1.9, 3 & 5 µm, T_{max}=150 °C, pH = 1–14
Discovery Zr-PBD	*Supelco*	300 Å, 3 & 5 µm, pH = 1–13

L50 *Multifunction resin with reverse-phase retention and strong anion-exchange functionalities. The resin consists of ethylvinylbenzene, 55% cross-linked with divinylbenzene copolymer, 3 to 15 µm in diameter, and a surface are of not less than 350 m2 per g. Substrate is coated with quartenary ammonium functionalized latex particles consisting of styrene cross-linked with divinylbenzene.*

suggested packing	*manufacturer*	*properties / variations*
OmniPac PAX-500	*Thermo Scientific*	60 Å, 300 m^2/g, 8.5 µm, pH 0–14
Proteomix SAX-POR	*Sepax Technologies*	500 Å, 10 µm, pH 2–12, T_{max} = 80 °C

L51 *Amylose tris-3,5-dimethylphenylcarbamate-coated, porous, spherical, silica particles, 3 to 10 µm in diameter.*

suggested packing	*manufacturer*	*properties / variations*
CHIRALPAK AD	*Daicel/Chiral Technologies*	10 µm, pH 2–9, T_{max} = 40 °C
CHIRALPAK AD-H	*Daicel/Chiral Technologies*	5 µm, pH 2–9, T_{max} = 40 °C
CHIRALPAK AD-3	*Daicel/Chiral Technologies*	3 µm, pH 2–9, T_{max} = 40 °C
Kromasil AmyCoat	*Akzo Nobel Separations*	3, 5, 10 & 25 µm

L52 *A strong cation exchange resin made of porous silica with sulfopropyl groups, 5 to 10 µm in diameter*

suggested packing	*manufacturer*	*properties / variations*
BioBasic SCX	*Thermo Scientific*	300 Å, 100 m^2/g, 3% C, 5 µm, pH 2–8, T_{max} = 60 °C
SUPELCOSIL LC-SCX	*Supelco*	120 Å, 170 m^2/g, 5 µm, pH 2–7.5, T_{max} = 70 °C
TSKgel SP-2SW	*Tosoh Bioscience*	125 Å, 5 µm, pH 2–7.5
TSKgel IC-Cation SW	*Tosoh Bioscience*	5 µm, pH 2–7.5, T_{max} = 45 °C

L53 *Weak cation-exchange resin consisting of ethylvinylbenzene, 55% cross-linked with divinylbenzene copolymer, 3 to 15 µm in diameter. Substrate is surface grafted with carboxylic acid and/or phosphoric acid functionalized monomers. Capacity not less than 500 µEq/column.*

suggested packing	*manufacturer*	*properties / variations*
Dionex IonPac CS14	*Thermo Scientific*	8 µm, cross linkage 55%, pH 0–14

L54 *A size exclusion medium made of covalent bonding of dextran to highly cross-linked porous agarose beads, 5–15 µm in diameter.*

suggested packing	*manufacturer*	*properties / variations*
SUPERDEX 75 10/300 GL	*GE Healthcare*	13 µm, pH 3–12, T_{max} = 40 °C
Superdex 200 Increase 10/300 GL	*GE Healthcare*	8.6 µm, pH 3–12, T_{max} = 40 °C
Superdex 200 Increase 5/150 GL	*GE Healthcare*	8.6 µm, pH 3–12, T_{max} = 40 °C
Superdex 200 Increase 3.2/300	*GE Healthcare*	8.6 µm, pH 3–12, T_{max} = 40 °C

L55 *A strong cation-exchange resin made of porous silica coated with polybutadiene-maleic acid copolymer, about 5 µm in diameter.*

suggested packing	*manufacturer*	*properties / variations*
IC-Pak C M/D	*Waters*	5 µm, pH 2–7, T_{max} = 50 °C

L56-L59

L56 Propyl silane chemically bonded to totally or superficially porous silica particles, 3 to 10 µm in diameter.

suggested packing	manufacturer	properties / variations
Poroshell 300 SB-C3	*Agilent Technologies*	300 Å, 4.5 m^2/g, 5 µm, pH 1–8, T_{max} = 90 °C
Zorbax StableBond C3	*Agilent Technologies*	80 Å, 180 m^2/g, 4% C, 1.8, 3.5 & 5 µm, pH 1–8, T_{max} = 80 °C

L57 A chiral-recognition protein, ovomucoid, chemically bonded to silica particles, about 5 µm in diameter, with a pore size of 120 Å.

suggested packing	manufacturer	properties / variations
Ultron ES-OVM	*Shinwa Chemical Industries*	120 Å, 5 µm, pH = 3,0-7,5
Ultron ES-OVM	*Agilent Technologies*	120 Å, 5 µm, pH = 3,0-7,5

L58 Strong cation-exchange resin consisting of sulfonated cross-linked styrene-divinylbenzene copolymer in the sodium form, about 6–30 µm diameter

suggested packing	manufacturer	properties / variations
Carbomix Na-NP5	*Sepax*	5 µm, cross linkage 8%, pH 5–9, T_{max} = 85 °C
Carbomix Na-NP10	*Sepax*	10 µm, cross linkage 5, 8 & 10%, pH 5–9, T_{max} = 85 °C
CARBOSep Coregel 87N	*Transgenomic*	9 µm, cross linkage 8%, T_{max} = 95 °C
CARBOSep CHO611	*Transgenomic*	10 µm, cross linkage 6%, T_{max} = 95 °C
CARBOSep CHO611OH	*Transgenomic*	10 µm, cross linkage 6%, T_{max} = 95 °C
Hi-Plex Na	*Agilent Technologies*	10 µm, cross linkage 4%, T_{max} = 80–90 °C
MCI GEL CK08S	*Mitsubishi Chemical*	11 µm, cross linkage 8%, pH 1–7
MCI GEL CK08E	*Mitsubishi Chemical*	9 µm, cross linkage 8%, pH 1–7
MCI GEL CK04S	*Mitsubishi Chemical*	11 µm, cross linkage 4%, pH 6–7
MCI GEL CK02A	*Mitsubishi Chemical*	20 µm, cross linkage 2%, pH 6–7
Shodex SUGAR KS-801	*Shodex*	6 µm, pH 3–7, T_{max} = 85 °C
Shodex SUGAR KS-802	*Shodex*	6 µm, pH 3–7, T_{max} = 85 °C
TSKgel SCX(Na+)	*Tosoh Bioscience*	60 Å, 5 µm, pH 1–14, T_{max} = 45 °C

L59 Packing for the size-exclusion separations of proteins (separation by molecular weight) over the range of 5 to 7000 kDa. The packing is spherical 1.5–10 µm, silica or hybrid packing with a hydrophilic coating.

suggested packing	manufacturer	properties / variations
Nanofilm SEC-150	*Sepax*	150 Å, 5 µm, pH 2–8.5, T_{max} = 80 °C
Nanofilm SEC-250	*Sepax*	250 Å, 5 µm, pH 2–8.5, T_{max} = 80 °C
Nanofilm SEC-500	*Sepax*	450 Å, 5 µm, pH 2–8.5, T_{max} = 80 °C
Shodex PROTEIN KW-800	*Shodex*	0, 1000 & 1500 Å, 5 & 7 µm, 40pH 3–7.5, T_{max} = 45 °C
Shodex KW400	*Shodex*	400, 800, 1500 & 2000 Å, 3 & 5 µm, pH 3–7.5, T_{max} = 45 °C
SRT SEC-100	*Sepax*	100 Å, 5 µm, pH 2–8.5, T_{max} = 80 °C
SRT SEC-150	*Sepax*	150 Å, 5 µm, pH 2–8.5, T_{max} = 80 °C
SRT SEC-300	*Sepax*	300 Å, 5 µm, pH 2–8.5, T_{max} = 80 °C
SRT SEC-500	*Sepax*	500 Å, 5 µm, pH 2–8.5, T_{max} = 80 °C
SRT SEC-1000	*Sepax*	1000 Å, 5 µm, pH 2–8.5, T_{max} = 80 °C

L59 CONTINUED

TSKgel SuperSW	*Tosoh Bioscience*	125 & 250 Å, 3 & 4 µm, pH 2.5–7.5, T_{max} = 30 °C
TSKgel SWxl	*Tosoh Bioscience*	125, 250 & 450 Å, 5 & 8 µm, pH 2.5–7.5, T_{max} = 30 °C
TSKgel SW	*Tosoh Bioscience*	125 & 250 Å, 5 µm, pH 2.5–7.5, T_{max} = 30 °C
TSKgel SW mAb	*Tosoh Bioscience*	250 & 300 Å, 3 & 4 µm, pH 2.5–7.5, T_{max} = 30 °C
TSKgel UP-SW	*Tosoh Bioscience*	250 Å, 2 µm, pH 2.5–7.5, T_{max} = 30 °C

L60 *Spherical, porous silica gel, 10 µm or less in diameter, the surface of which has been covalently modified with alkyl amide groups and endcapped.*

suggested packing	*manufacturer*	*properties / variations*
Discovery RP-Amide C16	*Supelco*	180 Å, 200 m^2/g, 11% C, 5 µm, pH 2–8, T_{max} = 70 °C
Halo RP-Amide	*Advanced Materials Tech.*	90 Å, 120 m^2/g, 7.3% C, 2 µm, pH 2–9 90 Å, 135 m^2/g, 8.2% C, 2.7 µm, pH 2–9 90 Å, 90 m^2/g, 5.5% C, 5 µm, pH 2–9

L61 *A hydroxide-selective, strong anion-exchange resin consisting of a highly cross-linked core of 13 µm micropo-rous particles having a pore size less than 10 Å units and consisting of ethylvinylbenzene cross-linked with 55% divinylbenzene with a latex coating composed of 85 nm diameter microbeads bonded with alkanol quarternary ammonium ions (6%).*

suggested packing	*manufacturer*	*properties / variations*
Dionex IonPac AG-11	*Thermo Scientific*	Guard Column for IonPac AS11 (50 mm length)
Dionex IonPac AS-11	*Thermo Scientific*	140 Å, 13 µm, cross linkage 55%, pH 0–14

L62 *C30 silane bonded phase on a fully porous spherical silica, 3 to 15 µm in diameter.*

suggested packing	*manufacturer*	*properties / variations*
Acclaim C30	*Thermo Scientific*	200 Å, 200 m^2/g, 13% C, 3 & 5 µm, pH 2–8, T_{max} = 60 °C
Develosil XG-C30	*Nomura Chemicals*	140 Å, 300 m^2/g, 19.5% C, 3 & 5 µm, pH 1–8
Develosil RP-Aqueous	*Nomura Chemicals*	140 Å, 300 m^2/g, 18% C, 3 & 5 µm, pH 2–8
ProntoSIL C30	*Bischoff*	120 Å, 300 m^2/g, 25% C, 3 µm 200 Å, 200 m^2/g, 20% C, 3, 5 & 10 µm 300 Å, 100 m^2/g, 13% C, 3 & 5 µm
SMT C30	*Separation Methods Tech*	100 Å, 340 m^2/g, 28% C, 5 µm

L63 *Glycopeptide teicoplanin linked through multiple covalent bonds to a 100 Å units spherical silica.*

suggested packing	*manufacturer*	*properties / variations*
Astec Chirobiotic T	*Supelco*	100 Å, 5 & 10 µm, pH 3.8–6.8
Astec Chirobiotic T2	*Supelco*	200 Å, 5 & 10 µm, pH 3.8–6.8

L64 *Strongly basic anion-exchange resin consisting of 8% crosslinked styrene-divinylbenzene copolymer with a quarternary ammonium group in the chloride form, 45 to 180 µm in diameter.*

suggested packing	*manufacturer*	*properties / variations*
AG1-X8	*BioRad*	45–106 & 106–180 µm

L65-L72

L65 Strongly acidic cation exchange resin consisting of 2% sulfonated crosslinked styrene divinylbenzene copolymer with a sulfonic acid group in the hydrogen form, 63 to 250 µm in diameterm in diameter.

suggested packing	manufacturer	properties / variations
AG50W-X2	*BioRad*	75–180 µm

L66 A crown ether coated on a 5 µm particle size silica gel substrate. The active site is (S) -18-crown-6-ether.

suggested packing	manufacturer	properties / variations
Crownpak CR (+)	*Daicel/Chiral Technologies*	5 µm, pH 1–9, T_{max} = 50 °C

L67 Porous vinyl alcohol copolymer with a C18 alkyl group attached to the hydroxyl group of the polymer, 2 to 10 µm in diameter.

suggested packing	manufacturer	properties / variations
apHera C18	*Supelco*	300 Å, 5, 9 & 13 µm, pH 2–12
Asahipak ODP-40	*Shodex*	250 Å, 17 % C, 4 µm, pH 2–13, T_{max} = 60 °C
Asahipak ODP-50	*Shodex*	250 Å, 17 % C, 5 µm, pH 2–13, T_{max} = 60 °C

L68 Spherical, porous silica, 10 µm or less in diameter, the surface of which has been covalently modified with alkyl amide groups and not endcapped.

suggested packing	manufacturer	properties / variations
Cogent Amide	MicroSolv	100 Å, 390 m^2/g, 2–3 % C, 4 µm, pH 2.5–7.5, T_{max} = 80 °C
SUPLEX pKb-100	Supelco	120 Å, 170 m^2/g, 12.5 % C, 5 µm, pH 2–7.5, T_{max} = 70 °C
TSKgel Amide-8	Tosoh Bioscience	100 Å, 450 m^2/g, 2, 3, 5 & 10 µm, pH 2–7.5, T_{max} = 50–80 °C

L69 Ethylvinylbenzene/divinylbenzene substrate agglomerated with quaternary amine functionalized 130 nm latex beads, about 6.5 µm in diameter.

suggested packing	manufacturer	properties / variations
Dionex CarboPac PA20	*Thermo Scientific*	6.5 µm, cross linkage 55%, pH 0–14, T_{max} = 60 °C

L70 Cellulose tris(phenyl carbamate) coated on 5 µm silica.

suggested packing	manufacturer	properties / variations
Chiralcel OC-H	*Daicel/Chiral Technologies*	5 µm, T_{max} = 40 °C

L71 A rigid, spherical polymet[h]acrylate, 4 to 6 µm in diameter.

suggested packing	manufacturer	properties / variations
MCI GEL CMG20/C04	*Mitsubishi Chemical*	4 µm, pH 2–12
Shodex RSpak DE-213	*Shodex*	25 Å, 4 µm, pH 2–12, T_{max} = 60 °C
Shodex RSpak DE-413	*Shodex*	25 Å, 4 µm, pH 2–12, T_{max} = 60 °C
Shodex RSpak DE-613	*Shodex*	25 Å, 6 µm, pH 2–12, T_{max} = 70 °C

L72 (S)-phenylglycine and 3,5-dinitroana[i]line urea linkage covalently bonded to silica.

suggested packing	manufacturer	properties / variations
Sumichiral OA-3300 S	*Sumika*	5 µm

L73 A rigid, spherical polydivinylbenzene particle, 5 to 10 µm in diameter.

suggested packing	manufacturer	properties / variations
MCI GEL CDR10	*Mitsubishi Chemical*	7 µm, pH 1–13

L74 A strong anion-exchange resin consisting of a highly cross-linked core of 7-µm macroporous particles having a 100 Angstroms average pore size and consisting of ethylvinylbenzene cross-linked with 55% divinylbenzene and an anion-exchange layer grafted to the surface, which is functionalized with alkyl quartenary ammonium ions.

suggested packing	manufacturer	properties / variations
Dionex IonPac AS14A	*Thermo Scientific*	100 Å, 5 & 7 µm, cross linkage 55%, pH 2–11

L75 A chiral-recognition protein, bovine serum albumin (BSA), chemically bonded to silica particles, about 7 µm in diameter, with a pore size of 300 Angstroms.

suggested packing	manufacturer	
Resolvosil BSA	*Macherey-Nagel*	300 Å, 7 µm

L76 Silica based weak cation-exchange material, 5 µm in diameter. Substrate is surface polymerized polybutadiene-maleic acid to provide carboxylic acid functionalities. Capacity not less than 29 µEq/column.

suggested packing	manufacturer	
Metrosep C4	*Metrohm*	5 µm, pH 2–7, T_{max} = 60 °C
Metrosep C6	*Metrohm*	5 µm, pH 2–7, T_{max} = 60 °C
Shodex IC YK-421	*Shodex*	5 µm, T_{max} = 60 °C

L77 Weak cation-exchange resin consisting of ethylvinylbenzene, 55% cross-linked with divinylbenzene copolymer, 6 to 9 µm diameter. Substrate is surface grafted with carboxylic acid functionalized groups. Capacity not less than 500 µEq/column (4 mm x 25 cm)

suggested packing	manufacturer	properties / variations
Dionex IonPac CS17	*Thermo Scientific*	6.5 & 7 µm, cross linkage 55 %

L78 A silane ligand that consists of both reversed-phase (an alkyl chain longer than C8) and anion-exchange (primary, secondary, or tertiary amino groups) functional groups chemically bonded to porous or non-porous or ceramic micro-particles, 1.0 to 50 µm in diameter or a monolithic rod

suggested packing	manufacturer	properties / variations
Acclaim Mixed-Mode WAX-1	*Thermo Scientific*	120 Å, 300 m^2/g, 3 & 5 µm, pH 2.5–7.5, T_{max} = 50 °C
Primesep B2	*SIELC Technologies*	100 Å, 5 & 10 µm

L79 A chiral-recognition protein, human serum albumin (HSA), chemically bondend to silica particles, about 5 µm in diameter.

suggested packing	manufacturer	properties / variations
CHIRALPAK HSA	*Daicel/Chiral Technologies*	5 µm, pH 5–7, T_{max} = 30 °C

L80-L85

L80 Cellulose tris(4-methylbenzoate)-coated, porous, spherical, silica particles, 5 - 20 µ in diameter

suggested packing	manufacturer	properties / variations
Chiralcel OJ	*Daicel/Chiral Technologies*	10 µm, pH 2–9, T_{max} = 40 °C
Chiralcel OJ-H	*Daicel/Chiral Technologies*	5 µm, pH 2–9, T_{max} = 40 °C
Chiralcel OJ-3	*Daicel/Chiral Technologies*	3 µm, pH 2–9, T_{max} = 40 °C

L81 A hydroxide-selective, strong anion-exchange resin consisting of a highly cross-linked core of 9 µm porous particles having a pore size of 2000 Angstroms units and consisting of ethylvinylbenzene cross-linked with 55% divinylbenzene with a latex coating composed of 70 nm diameter microbeads (6% crosslinked) bonded with alkanol quartenary ammonium ions.

suggested packing	manufacturer	properties / variations
Dionex IonPac AS11-HC	*Thermo Scientific*	9 µm, cross linkage 55%, pH 0–14

L82 Polyamine chemically bonded to cross-linked polyvinyl alcohol polymer, 4–5 µm in diameter

suggested packing	manufacturer	properties / variations
apHera NH2 Amino	*Supelco*	300 Å, 5, 9 & 13 µm, pH 2–12
Asahipak NH2P-40	*Shodex*	100 Å, 4 µm, pH 2–13, T_{max} = 50 °C
Asahipak NH2P-50	*Shodex*	100 Å, 5 µm, pH 2–13, T_{max} = 50 °C

L83 A hydroxide-selective, strong anion-exchange resin-quartenary amine bonded on latex particles attached to a core of 10.5 µm microporous particles having a pore size of 10 Angstroms and consisting of ethylvinylbenzene cross-linked with 55% divinylbenzene.

suggested packing	manufacturer	properties / variations
Dionex IonPac AG17-C	*Thermo Scientific*	Guard Column for IonPac AS17-C (50 mm length)
Dionex IonPac AS17-C	*Thermo Scientific*	10.5 µm, cross linkage 55%, pH 0–14

L84 Weak cation-exchange resin consisting of ethylvinylbenzene, 55% cross-linked with divinylbenzene copolymer, 5 µm diameter. Substrate is surface grafted with carboxylic acid functionalized groups. Capacity not less than 8400 µEq/column (5 mm x 25 cm).

suggested packing	manufacturer	properties / variations
Dionex IonPac CG16	*Thermo Scientific*	Guard Column for IonPac CS16 (50 mm length)
Dionex IonPac CS16	*Thermo Scientific*	5.5 µm, cross linkage 55%

L85 A silane ligand that consists of both reversed-phase (an alkyl chain longer than C8) and weak cation-exchange (carboxyl groups) functional groups chemically bonded to porous or non-porous particles, 1.0 - 50 µm in diameter

suggested packing	manufacturer	properties / variations
Acclaim Mixed-Mode WCX-1	*Thermo Scientific*	120 Å, 300 m^2/g, 3 & 5 µm, pH 2.5–7.5, Tmax = 50 °C
Cogent UDA	*MicroSolv Techn. Corp.*	100 Å, 390 m^2/g, 4 µm, 14–15% C, pH 2–8, Tmax = 80 °C
Cogent UDA 2.ō	*MicroSolv Techn. Corp.*	120 Å, 340 m^2/g, 2.2 µm, 14–15% C, pH 2–8, Tmax = 80 °C
Primesep 100	*SIELC Technologies*	100 Å, 5 & 10 µm
Primesep 200	*SIELC Technologies*	100 Å, 5 & 10 µm

L86 A 5 µm fused core particle with a highly polar ligand possessing 5 hydroxyl groups tethered to the silica gel outer layer.

suggested packing	manufacturer	properties / variations
Ascentis Express OH5	*Supelco*	90 Å, 2.7 µm, pH 2–9, T_{max} = 60 °C
Poroshell HILIC-OH5	*Agilent Technologies*	120 Å, 2.7 µm, pH 1–7, T_{max} = 45 °C

L87 Dodecyl silane chemically bonded to porous silica particles, 1.5 to 10 µm in diameter.

suggested packing	manufacturer	properties / variations
Accucore RP-MS	*Thermo Scientific*	80 Å, 130 m^2/g, 7% C, 2.6 µm, pH 2–9, T_{max} = 60 °C

L88 Glycopeptide vancomycin linked through multiple covalent bonds to 100 Angstroms spherical silica.

suggested packing	manufacturer	properties / variations
Astec Chirobiotic-V	*Supelco*	100 Å, 5 µm, pH 3.5–7
Astec Chirobiotic-V2	*Supelco*	200 Å, 5 & 10 µm, pH 3.5–7
Poroshell Chiral-V	*Agilent Technologies*	120 Å, 130 m^2/g, 2.7 µm, pH 2.5–7, T_{max} = 45 °C

L89 Packing having the capacity to separate compounds with a molecular weight range from 100–3000 (as determined by polyethylene oxide), applied to neutral and anionic water-soluble polymers. A polymethacrylate resin base, cross-linked with polyhydroxylate ether (surface contains some residual cationic functional groups).

suggested packing	manufacturer	properties / variations
TSKgel G-Oligo-PW	*Tosoh Bioscience*	125 Å, 7 µm, pH 2–12, T_{max} = 80 °C
TSKgel SuperOligoPW	*Tosoh Bioscience*	125 Å, 3 µm, pH 2–12, T_{max} = 80 °C

L90 Amylose tris-[(S)-alpha-methylbenzylcarbamate] coated on porous, spherical silica particles, 3 to 10 µm in diameter

suggested packing	manufacturer	properties / variations
CHIRALPAK AS	*Daicel/Chiral Technologies*	10 µm, pH 2–9, T_{max} = 40 °C
CHIRALPAK AS-H	*Daicel/Chiral Technologies*	5 µm, pH 2–9, T_{max} = 40 °C
CHIRALPAK AS-3	*Daicel/Chiral Technologies*	3 µm, pH 2–9, T_{max} = 40 °C

L91 Strong anion-exchange resin consisting of monodisperse porous polystyrene/divinyl benzene beads coupled with quartenary amine. Bead size is 10 µm

suggested packing	manufacturer	properties / variations
Metrosep A Supp 1	*Metrohm*	7 µm, pH 1–13
Metrosep A Supp 10	*Metrohm*	4.6 µm, pH 0–14, T_{max} = 70 °C
Metrosep A Supp 16	*Metrohm*	4.6 µm, pH 0–14, T_{max} = 70 °C
Metrosep A Supp 17	*Metrohm*	5 µm, pH 0–14, T_{max} = 70 °C
Mono Q 5/50 GL	*GE Healthcare*	10 µm
Mono Q 4.6/100 PE	*GE Healthcare*	10 µm
Mono Q PC 1.6/5	*GE Healthcare*	10 µm
Mono Q 10/100 GL	*GE Healthcare*	10 µm
Mono Q HR 16/10	*GE Healthcare*	10 µm

L92-L97

L92 A strong anion-exchange resin consisting of a highly cross-linked core of 5–9 µm macroporous particles having a 100 Angstroms average pore size and consisting of ethylvinylbenzene cross-linked with 55% divinylbenzene and an anion exchange layer grafted to the surface, which is functionalized with alkanol quartenary ammonium ions.

suggested packing	manufacturer	properties / variations
Dionex IonPac AS15	*Thermo Scientific*	100 Å, 5 & 9 µm, pH 0–14

L93 Cellulose tris(3,5-dimethylphenylcarbamate) reversed phase chiral stationary phase coated on 3 or 5 µm silica gel particles

suggested packing	manufacturer	properties / variations
CHIRACEL OD-RH	*Daicel/Chiral Technologies*	5 µm, pH 2–9, T_{max} = 40 °C
CHIRACEL OD-3R	*Daicel/Chiral Technologies*	3 µm, pH 2–9, T_{max} = 40 °C

L94 A strong anion-exchange resin consisting of a highly crosslinked 15 µm microporous particles functionalized with very low crosslinked latex (0.5%) to provide alkanol quartenary ammonium ion exchange sites.

suggested packing	manufacturer	properties / variations
Dionex IonPac AG4A	*Thermo Scientific*	Guard Column for IonPac AS4A (50 mm length)
Dionex IonPac AS4A	*Thermo Scientific*	15 µm, pH 0–14

L95 Highly polar alkyl ligand comprising five hydroxyl groups that are chemically bonded to totally porous or superficially porous silica or a monolithic silica rod

suggested packing	manufacturer	properties / variations
Halo Penta-HILIC	*Advanced Materials Technology*	90 Å, 120 m^2/g, 2.8% C, 2 µm, pH 2–9 90 Å, 135 m^2/g, 3.2% C, 2.7 µm 90 Å, 90 m^2/g, 3.1% C, 5 µm

L96 Alkyl chain, reversed-phase bonded totally or superficially porous silica designed to retain hydrophilic and other polar compounds when using highly aqueous mobile phases, including 100% aqueous, 1.5 µm to 10 µm in diameter.

suggested packing	manufacturer	properties / variations
Poroshell SB-Aq	*Agilent Technologies*	120 Å, 130 m^2/g, 2.7 µm, pH 1–8, T_{max} = 80 °C
Zorbax SB-Aq	*Agilent Technologies*	80 Å, 180 m^2/g, 1.8, 3.5 & 5 µm, pH 1–8, T_{max} = 80 °C

L97 Weak cation-exchange resin consisting of a highly cross-linked core of 5.5 µm porous particles having a pore size of 2000 Angstroms units and consisting of ethylvinylbenzene cross-linked with 55% divinylbenzene. Substrate is surface grafted with carboxylic acid functionalized groups. Capacity not less than 2400 µEq/column (4 mm x 25 cm).

suggested packing	manufacturer	properties / variations
Dionex IonPac CS19	*Thermo Scientific*	2000 Å, 5.5 µm, pH 0–7, T_{max} = 30 °C

L98 *Weak cation-exchange resin consisting of a highly cross-linked core of 8 µm microporous particles having an average pore size of 10 Angstroms units and consisting of ethylvinylbenzene cross-linked with 55% divinylbenzene. Substrate is surface grafted with carboxylic acid functionalized groups. Capacity not less than 46 µEq/column (4 mm x 5 cm).*

suggested packing	*manufacturer*	*properties / variations*
Dionex IonPac CG19	*Thermo Scientific*	8 µm

L99 *Amylose tris-(3,5-dimethylphenylcarbamate), immobilized on porous, spherical, silica particles, 3 to 5 µm in diameter*

suggested packing	*manufacturer*	*properties / variations*
CHIRALPAK IA	*Daicel/Chiral Technologies*	5 µm, pH 2–9, T_{max} = 40 °C
CHIRALPAK IA-3	*Daicel/Chiral Technologies*	3 µm, pH 2–9, T_{max} = 40 °C

L100 *A 55% crosslinked, microporous, hydrophobic resin core (9 µm microporous particles having a pore size of 10 Angstroms units) that consists of a bilayer of anion and cation exchange latex. The first layer is fully sulfonated (140 nm) and the second layer is fully aminated (76 nm)*

suggested packing	*manufacturer*	*properties / variations*
Dionex IonPac CG5A	*Thermo Scientific*	Guard Column for IonPac CS5A (50 mm length)
Dionex IonPac CS5A	*Thermo Scientific*	9 µm

L101 *Cholesteryl groups chemically bonded to porous or non-porous silica or ceramic micro-particles, 1.5 to 10 µm in diameter, or a monolithic rod.*

suggested packing	*manufacturer*	*properties / variations*
Cogent UDC-Cholesterol	*MicroSolv*	100 Å, 390 m^2/g, 13–14% C, 4 µm, pH 2–8, T_{max} = 80 °C
Cogent UDC-Cholesterol 2.o	*MicroSolv*	120 Å, 340 m^2/g, 13–14% C, 2.2 µm, pH 2–8, T_{max} = 80 °C

L102 *(Naproxen, (S,S)Whelk-O 1) 1-(3,5-dinitrobenzamido)-1,2,3,4-tetrahydrophenanthrene covalently bonded to porous spherical silica particles, 5 to 10 µm in diameter*

suggested packing	*manufacturer*	*properties / variations*
(S,S) Whelk-O 1	*Regis Technologies*	100 Å, 1.8, 3.5, 5 & 10 µm, pH 2.5–7.5

L103 *A hydroxide-selective, strong anion-exchange resin consisting of a highly cross-linked core of 7.5 µm porous particles having a pore size of 2000 Angstroms units and consisting of ethylvinylbenzene cross-linked with 55% divinylbenzene electrostatically bonded with hyperbranched alkanol quaternary ammonium ions*

suggested packing	*manufacturer*	*properties / variations*
Dionex IonPac AS19	*Thermo Scientific*	2000 Å, 7.5 µm, pH 0–14

L104 *Triazole groups chemically bonded to porous silica particles, 1.5 to 10 µm in diameter*

suggested packing	*manufacturer*	*properties / variations*
Cosmosil HILIC	*Nacalai Tesque*	120 Å, 300 m^2/g, 5 µm

L105-L112

L105 A strong anion-exchange resin consisting of a highly cross-linked 9 µm supermacroporous (2000 Angstroms) particles functionalized with very low cross-linked latex (0.2%) to provide alkyl quaternary ammonium ion sites

suggested packing	manufacturer	properties / variations
Dionex IonPac AS12A	*Thermo Scientific*	2000 Å, 9 µm, pH 0–14

L106 Weak cation-exchange resin consisting of ethylvinylbenzene, 55% cross-linked with divinylbenzene copolymer, 5-8 µm diameter, macroporous particles having an average pore size of 100 Å units. Substrate is surface grafted with carboxylic acid and phosphonic acid functional groups. Capacity not less than 2800 µEq/column (4 mm x 25 cm).

suggested packing	manufacturer	properties / variations
Dionex IonPac CG12A	*Thermo Scientific*	Guard Column for IonPac CS12A (50 mm length)
Dionex IonPac CS12A	*Thermo Scientific*	5.5 & 8.5 µm

L107 Cellulose tris(4-methylbenzoate)-coated porous spherical particles, 3 to 5 µm in diameter, for use with reversed phase mobile phases.

suggested packing	manufacturer	properties / variations
CHIRALCEL OJ-RH	*Daicel/Chiral Technologies*	5 µm, pH 2–9, T_{max} = 40 °C

L108 A chiral-recognition protein, cellobiohydrolase (CBH), chemically bonded to silica particles, about 5 µm in diameter

suggested packing	manufacturer	properties / variations
Chirapak CBH	*Daicel/Chiral Technologies*	5 µm, pH 4–7, T_{max} = 30 °C

L109 Spherical particles of porous graphitic carbon, 3 to 30 µm in diameter

suggested packing	manufacturer	properties / variations
Hypercarb	*Thermo Scientific*	250 Å, 120 m^2/g, 100% C, 3 & 5 µm, pH 0–14, T_{max} = 200 °C

L110 A strong anion-exchange resin consisting of a highly cross-linked 13 µm microporous (less than 10 Angstroms) particles coated with very low cross-linked latex (0.5%) to provide alkanol quaternary ammonium ion exchange sites.

suggested packing	manufacturer	properties / variations
Dionex IonPac AG12A	*Thermo Scientific*	13 µm

L111 Polyamine chemically bonded to porous spherical silica particles, 5 µm in diameter

suggested packing	manufacturer	properties / variations
YMC-Pack Polyamine II	*YMC*	120 Å, 5 µm, pH 2–7.5, T_{max} = 50 °C

L112 A hydroxide-selective, strong anion-exchange resin consisting of a highly cross-linked core of 8.5 µm porous particles having a pore size of 2000 Angstroms units and consisting of ethylvinylbenzene cross-linked with 55% divinylbenzene with a latex coating composed of 65 nm diameter microbeads (5% crosslinked) bonded with alkanol quaternary ammonium ions

suggested packing	manufacturer	properties / variations
Dionex IonPac AG10	*Thermo Scientific*	8.5 µm, pH 0–14

L113 A hydroxide-selective, strong anion-exchange resin consisting of a highly cross-linked core of 7.5 µm porous particles having a pore size of 2000 Angstroms units and consisting of ethylvinylbenzene cross-linked with 55% divinylbenzene with a latex coating composed of 65 nm diameter microbeads (5%) crosslinked bonded with alkanol quaternary ammonium ions.

suggested packing	manufacturer	properties / variations
Dionex IonPac AS18	*Thermo Scientific*	2000 Å, 7.5 µm, pH 0–14

L114 Sulfobetaine graft-polymerized to totally or superficially porous silica, 1.5 to 10 µm in diameter, or a monolithic rod. Packing having densely bonded zwitterionic groups with 1:1 charge balance

suggested packing	manufacturer	properties / variations
SeQuant ZIC-HILIC	*Merck KgaA*	100 & 200 Å, 3.5 & 5 µm, pH 3–8, T_{max} = 70 °C

L115 Ethylvinylbenzene/divinylbenzene substrate (55% cross-linked) agglomerated with quaternary amine functionalized 275 nm latex microbeads (6% cross-linked), about 8.5 µm in diameter

suggested packing	manufacturer	properties / variations
Dionex CarboPac PA100	*Thermo Scientific*	8.5 µm, pH 0–14, T_{max} = 60 °C

L116 Sulfonated ethylvinylbenzene/divinylbenzene substrate approximately 12 to 14 µm in diameter agglomerated with hydrophilic quaternary amine functionalized glycidyl-derivative methacrylate microbeads.

suggested packing	manufacturer	properties / variations
Dionex DNAPac PA100	*Thermo Scientific*	13.5 µm, pH 2–12, T_{max} = 90 °C

L117 A crown ether coated on a 5 µm particle size silica gel substrate. The active site is (R)-18-crown-6-ether

suggested packing	manufacturer	properties / variations
CROWNPAK CR(-)	*Daicel/Chiral Technologies*	5 µm, pH 1–9, T_{max} = 50 °C

L118 Aqueous polymerized C18 groups on silica particles, 2 to 5 µm in diameter

suggested packing	manufacturer	properties / variations
MZ-PAH	*MZ-Analysentechnik*	3 & 5 µm
ChromSpher PAH	*Agilent Technologies*	120 Å, 5 µm
Pursuit PAH	*Agilent Technologies*	200 Å, 200 m^2/g, 3 & 5 µm, pH 1.5–10

L## (Ethylhexyl triazone, FluoFix) – Fluorocarbon chains chemically bonded to 5 µm spherical silica particles

suggested packing	manufacturer	properties / variations
Wakopak FluoFix-II 120E	*Wako Pure Chemical Ind.*	120 Å, 300 m^2/g, 5 µm, Endcapping
Wakopak Fluofix 120E	*Wako Pure Chemical Ind.*	120 Å, 300 m^2/g, 5 µm, Endcapping
Wakopak Fluofix 120N	*Wako Pure Chemical Ind.*	120 Å, 300 m^2/g, 5 µm, No Endcapping

L## (Lanatoprost, Chiracel OD-R) – Cellulose tris(3,5-dimethylphenylcarbamate) coated on 10 µm silica gel particles

suggested packing	manufacturer	properties / variations
CHIRALCEL OD-R	*Daicel/Chiral Technologies*	10 µm, pH 2–9, T_{max} = 40 °C

L## *(Polyethylene Glycol 3350, Aquagel OH 40) – Packing having the capacity to separate compounds with a molecular weight range from 10,000 to 200,000 g/mol (as determined by polyethylene oxide), applied to neutral, anionic, and cationic water-soluble polymers, composed of a rigid macroporous material with a hydrophilic surface*

suggested packing	*manufacturer*	*properties / variations*
Aquagel OH 40	*Agilent Technologies*	8 & 15 µm, pH 2–10, T_{max} = 90 °C, p_{max} = 140 bar

L## *(Felodipine Extended-release Tablets, COSMOSIL PYE) – Pyrenyl groups chemically bonded to porous silica particles, 1.5 to 10 µm in diameter, or a monolithic rod*

suggested packing	*manufacturer*	*properties / variations*
COSMOSIL PYE	*Nacalai Tesque*	120 Å, 300 m^2/g, 18% C, 5 µm, pH 2–7.5

L## *(Atomoxetine Hydrochloride, Chiralpak IC) – Cellulose tris-(3,5-dichlorophenylcarbamate), immobilized on porous, spherical, silica particles, 3 to 5 µm in diameter*

suggested packing	*manufacturer*	*properties / variations*
CHIRALPAK IC	*Daicel/Chiral Technologies*	5 µm, pH 2–9, T_{max} = 40 °C
CHIRALPAK IC-3	*Daicel/Chiral Technologies*	3 µm, pH 2–9, T_{max} = 40 °C

L## *(Liquid Glucose, Aminex HPX-42A) – Strong cation-exchange resin consisting of sulfonated cross-linked styrene-divinylbenzene copolymer in the silver form, average 9 µm in diameter.*

suggested packing	*manufacturer*	*properties / variations*
Aminex HPC-42A	*Bio-rad*	

L## *(Palonosetron Hydrochloride, Chirobiotic-V) – Glycopeptide vancomycin linked through multiple covalent bonds to 100 Ansgtroms spherical silica.*

suggested packing	*manufacturer*	*properties / variations*
Astec Chirobiotic-V	*Supelco*	100 Å, 5 µm, pH 3.5–7
Astec Chirobiotic-V2	*Supelco*	200 Å, 5 & 10 µm, pH 3.5–7

L## *(Adenosine, Dionex IonPac AG18) - A hydroxide-selective, strong anion-exchange resin consisting of a highly cross-linked core of 13 µm microporous particles having a pore size of <10 Angstroms units and consisting of ethylvinylbenzene cross-linked with 55% divinylbenzene with a latex coating composed of 65 nm diameter microbeads (8% crosslinked) bonded with alkanol quaternary ammonium ions. Capacity not less than 10 µEq/column (4 mm x 5 cm).*

suggested packing	*manufacturer*	*properties / variations*
Dionex IonPac AG18	*Thermo Scientific*	13 µm

L## *(Adenosine, Dionex IonPac AS18) - A hydroxide-selective, strong anion-exchange resin consisting of a highly cross-linked core of 7.5 µm macroporous particles having an average pore size of 2000 Angstroms units and consisting of ethylvinylbenzene cross-linked with 55% divinylbenzene with a latex coating composed of 65 nm diameter microbeads (8% crosslinked) bonded with alkanol quaternary ammonium ions. Capacity not less than 285 µEq/column (4 mm x 25 cm).*

suggested packing	*manufacturer*	*properties / variations*
Dionex IonPac AS18	*Thermo Scientific*	2000 Å, 7.5 µm, pH 0–14

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