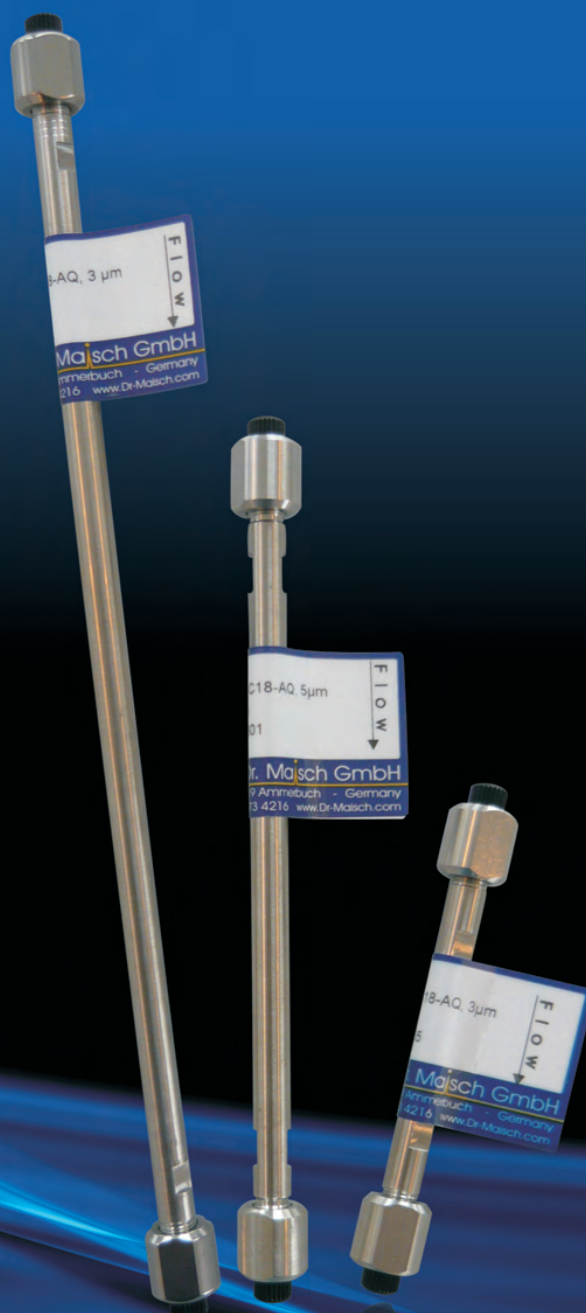


Dr. Maisch GmbH

High Performance LC • HPLC-Columns and more

COLUMNS
MADE
BY
DR. MAISCH



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Following phases are always in stock!

Phases from Fa. Dr. Maisch-GmbH

ReproSil®-Pur (Maisch)

Porous spherical silica: 1.9 - 10 µm
 Pore diameter: 100, 120, 200, 300 Å°
 Surface area: 450, 300, 200, 100 m²/g
 Purity > 99,999%

**Specifically designed for pharmaceutical and biotechnical separations. Fully validated phases.
 For all kind of samples. Ideal for LC-MS separations.**

100Å° Pores	% Carbon	endcapping	Mat.No.:	Price group
Reprosil-Pur Basic C18, 1.9	17 %	bidentate endc.	r119.b9	7
Reprosil-Pur Basic C18, 2.5 µm	17 %	bidentate endc.	r125.b9	7
ReproSil-Pur Basic-C18, 3 µm	17 %	bidentate endc.	r13.b9	5
ReproSil-Pur Basic-C18, 4 µm	17 %	bidentate endc.	r14.b9	5
ReproSil-Pur Basic-C18, 5 µm	17 %	bidentate endc.	r15.b9	4
ReproSil-Pur Basic-C18, 10 µm	17 %	bidentate endc.	r10.b9	4
ReproSil-Pur Basic-C18-HD, 3 µm	25 %	bidentate endc.	r13.b9h	5
ReproSil-Pur Basic-C18-HD, 5 µm	25 %	bidentate endc.	r15.b9h	4
ReproSil-Pur Basic-C18-HD, 10 µm	25 %	bidentate endc.	r10.b9h	4
Reprosil-Pur Basic C8, 1.9	15 %	bidentate endc.	r119.b8	7
ReproSil-Pur Basic-C8, 3 µm	15 %	bidentate endc.	r13.b8	5
ReproSil-Pur Basic-C8, 5 µm	15 %	bidentate endc.	r15.b8	4
ReproSil-Pur Basic-C8, 10 µm	15 %	bidentate endc.	r10.b8	4
ReproSil-Pur Basic-C8-2, 3 µm	12 %	bidentate endc.	r13.b82	5
ReproSil-Pur Basic-C8-2, 5 µm	12 %	bidentate endc.	r15.b82	4
60 Å° Pores:				
ReproSil-Pur 60 Si, 3 µm			r03.04.	5
ReproSil-Pur 60 Si, 5 µm			r05.04.	4
ReproSil-Pur 60 ODS-3, 5 µm	18 %	endc.	r05.93.	4
120Å° Pores				
ReproSil-Pur 120 Si, 3 µm			r13.00.	5
ReproSil-Pur 120 Si, 5 µm			r15.00	4
ReproSil-Pur 120 Si, 10 µm			r10.00.	4
ReproSil-Pur 120 C1, 3 µm	4 %	endc.	r13.1e.	5
ReproSil-Pur 120 C1, 5 µm	4 %	endc.	r15.1e.	4
ReproSil-Pur 120 C4, 3 µm	7 %	endc.	r13.4e.	5
ReproSil-Pur 120 C4, 5 µm	7 %	endc.	r15.4e.	4
ReproSil-Pur 120 C4, 10 µm	7 %	endc.	r10.4e.	4
ReproSil-Pur 120 C4, 20 µm	7 %	endc.	r120.4e.	4
ReproSil-Pur 120 C8, 3 µm	9 %	endc.	r13.8e.	5
ReproSil-Pur 120 C8, 5 µm	9 %	endc.	r15.8e.	4
ReproSil-Pur 120 C8, 10 µm	9 %	endc.	r10.8e.	4
ReproSil-Pur 120 C8, 20 µm	9 %	endc.	r120.8e.	4
Reprosil-Pur 120 C18-AQ, 1.9 µm	15 %	endc.	r119.aq	7
Reprosil-Pur 120 C18-AQ, 2.4 µm	15 %	endc.	r124.aq	7
ReproSil-Pur 120 C18-AQ, 3 µm	15 %	endc.	r13.aq.	5

ReproSil-Pur 120 C18-AQ, 5 µm	15 %	endc.	r15.aq.	4
ReproSil-Pur 120 C18-AQ, 7 µm	15 %	endc.	r17.aq.	4
ReproSil-Pur 120 C18-AQ, 10 µm	15 %	endc.	r10.aq.	4
ReproSil-Pur 120 C18-AQ, 15 µm	15 %	endc.	r115.aq.	4
ReproSil-Pur 120 C18-AQ, 20 µm	15 %	endc.	r120.aq.	4
ReproSil-Pur 120 ODS-3, 3 µm	17 %	endc.	r13.93.	5
ReproSil-Pur 120 ODS-3, 5 µm	17 %	endc.	r15.93.	4
ReproSil-Pur 120 ODS-3, 10 µm	17 %	endc.	r10.93.	4
ReproSil-Pur 120 ODS-3, 20 µm	17 %	endc.	r120.93.	4
ReproSil-Pur 120 RP18-NE, 3 µm	14 %	not endcapped!	r13.90.	5
ReproSil-Pur 120 RP18-NE, 5 µm	14 %	not endcapped!	r15.90.	4
ReproSil-Pur 120 Phenyl, 3 µm	8 %	endc.	r13.pe.	5
ReproSil-Pur 120 Phenyl, 5 µm	8 %	endc.	r15.pe.	4
ReproSil-Pur 120 Phenyl, 10 µm	8 %	endc.	r10.pe.	4
ReproSil-Pur 120 CN, 3 µm	7 %	endc.	r13.ce.	5
ReproSil-Pur 120 CN, 5 µm	7 %	endc.	r15.ce.	4
ReproSil-Pur 120 CN, 10 µm	7 %	endc.	r10.ce.	4
ReproSil-Pur 120 NH2, 3 µm	4 %		r13.a0.	5
ReproSil-Pur 120 NH2, 5 µm	4 %		r15.a0.	4
ReproSil-Pur 120 NH2, 10 µm	4 %		r10.a0.	4
ReproSil-Pur 120 Diol, 3 µm	7 %		r13.d0.	5
ReproSil-Pur 120 Diol, 5 µm	7 %		r15.d0.	4
ReproSil-Pur 120 Diol, 10 µm	7 %		r10.d0.	4

Wide-Pore Phases (for Biopolymers, Proteins + Peptides)

200A° Pores:

ReproSil-Pur 200 C18-AQ, 3 µm	11 %	endc.	r23.aq.	5
ReproSil-Pur 200 C18-AQ, 5 µm	11 %	endc.	r25.aq.	4
ReproSil-Pur 200 ODS-3, 3 µm	12 %	endc.	r23.93.	5
ReproSil-Pur 200 ODS-3, 5 µm	12 %	endc.	r25.93.	4
ReproSil-Pur 200 Diol, 5 µm	5 %	.	r25.d0.	6

300A° Pores:

ReproSil-Pur 300 Si, 3 µm			r33.00.	5
ReproSil-Pur 300 Si, 5 µm			r35.00.	4
ReproSil-Pur 300 Si, 10 µm			r30.00.	4
ReproSil-Pur 300 Diol, 5 µm	3.5 %		r35.d0.	6
ReproSil-Pur 300 C4, 3 µm	2.5 %	endc.	r33.4e.	5
ReproSil-Pur 300 C4, 5 µm	2.5 %	endc.	r35.4e.	4
ReproSil-Pur 300 C4, 10 µm	2.5 %	endc.	r30.4e.	4
ReproSil-Pur 300 C8, 3 µm	4 %	endc.	r33.8e.	5
ReproSil-Pur 300 C8, 5 µm	4 %	endc.	r35.8e.	4
ReproSil-Pur 300 C8, 10 µm	4 %	endc.	r30.8e.	4
ReproSil-Pur 300 ODS-3, 3 µm	9 %	endc.	r33.93.	5
ReproSil-Pur 300 ODS-3, 5 µm	9 %	endc.	r35.93.	4
ReproSil-Pur 300 ODS-3, 10 µm	9 %	endc.	r30.93.	4
ReproSil-Pur 300 Phenyl, 3 µm	3 %	endc.	r33.pe.	5
ReproSil-Pur 300 Phenyl, 5 µm	3 %	endc.	r35.pe.	4

1000A° Pores:

ReproSil-Pur 1000 ODS-3, 5 µm		endc.	R65.93.	4
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Prep. particles sizes:: 10, 15, 30, 50 µm.

ReproSil®-Gold (Maisch)

Porous spherical silica: 3, 5, 10 µm
 Pore diameter: 120 Å°, 200 Å°, 300 Å°
 Surface area: 300, 200, 100 m²/g
 Purity > 99,999%

Ideal für LC-MS separations.

Unique endcapping technique: double bonded (bidentate):

Exceptional chemical stability! Perfect reproducibility!

100Å° Pores	% Carbon	endcapping	Mat.No.:	Price group
Reprosil-Gold 120 C18, 1.9 µm	20 %	bidentate endc.	r119.9g	7
Reprosil-Gold 120 C18, 3 µm	20 %	bidentate endc.	r13.9g	5
Reprosil-Gold 120 C18, 4 µm	20 %	bidentate endc..	r14.9g	5
Reprosil-Gold 120 C18, 5 µm	20 %	bidentate endc..	r15.9g	4
Reprosil-Gold 120 C18, 10 µm	20 %	bidentate endc..	r10.9g	4
Reprosil-Gold 120 C8, 3 µm	12 %	bidentate endc.	r13.8g	5
Reprosil-Gold 120 C8, 4 µm	12 %	bidentate endc..	r14.8g	5
Reprosil-Gold 120 C8, 5 µm	12 %	bidentate endc..	r15.8g	4
Reprosil-Gold 120 C8, 10 µm	12 %	bidentate endc.	r10.8g	4
Reprosil-Gold 120 C8, 20 µm	12 %	bidentate endc.	r120.8g	4
Reprosil-Gold 120 C4, 3 µm	8 %	bidentate endc..	r13.4g	5
Reprosil-Gold 120 C4, 5 µm	8 %	bidentate endc..	r15.4g	4
Reprosil-Gold 120 C4, 10 µm	8 %	bidentate endc..	r10.4g	4
Reprosil-Gold 120 C4, 20 µm	8 %	bidentate endc..	r120.4g	4
Reprosil-Gold 120 C2, 5 µm (USP-L16)	4 %	bidentate endc.	r15.2g	4
200 Å° Pores				
Reprosil-Gold 200 C18, 3 µm	14 %	bidentate endc..	r23.9g	5
Reprosil-Gold 200 C18, 5 µm	14 %	bidentate endc..	r25.9g	4
Reprosil-Gold 200 C18, 10 µm	14 %	bidentate endc.	r20.9g	4
Reprosil-Gold 200 C8, 5 µm	8 %	bidentate endc.	r25.8g	4
Reprosil-Gold 200 C8, 10 µm	8 %	bidentate endc..	r20.8g	4
Reprosil-Gold 200 C4, 5 µm	5 %	bidentate endc.	r25.4g	4
Reprosil-Gold 200 C4, 10 µm	5 %	bidentate endc.	r20.4g	4
300 Å° Pores				
Reprosil-Gold 300 C18, 3 µm	8 %	bidentate endc.	r33.9g	5
Reprosil-Gold 300 C18, 5 µm	8 %	bidentate endc.	r35.9g	4
Reprosil-Gold 300 C18, 10 µm	8 %	bidentate endc.	r30.9g	4
Reprosil-Gold 300 C8, 3 µm	5 %	bidentate endc.	r33.8g	5
Reprosil-Gold 300 C8, 5 µm	5 %	bidentate endc.	r35.8g	4
Reprosil-Gold 300 C8, 10 µm	5 %	bidentate endc.	r30.8g	4
Reprosil-Gold 300 C4, 3 µm	3 %	bidentate endc.	r33.4g	5
Reprosil-Gold 300 C4, 5 µm	3 %	bidentate endc.	r35.4g	4
Reprosil-Gold 300 C4, 10 µm	3%	bidentate endc.	r30.4g	4
Reprosil-Gold 300 C4, 15 µm	3%	bidentate endc.	r31.4g	4
Reprosil-Gold 300 C2, 5 µm	1%	bidentate endc.	r35.2g	4

Prep. particles sizes:: 10, 15, 30, 50 µm

ReproSil® 80 (Maisch)

Porous spherical silica: 3, 5, 10 µm

Pore diameter: 80 Å°

Surface area: 220 m²/g

Alternative to Spherisorb!

	% Carbon	endcapping	Mat.No.:	Price group
ReproSil 80 Si, 3 µm			r03.00.	5
ReproSil 80 Si, 5 µm			r05.00.	3
ReproSil 80 C1, 5 µm	3 %		r05.10.	3
ReproSil 80 Hexyl, 5 µm	6%		r05.60.	4
ReproSil 80 Phenyl, 3 µm	6 %	part. endc.	r03.p0.	5
ReproSil 80 Phenyl, 5 µm	6 %	part. endc.	r05.p0.	4
ReproSil 80 C8, 3 µm	6 %	endc.	r03.8e.	5
ReproSil 80 C8, 5 µm	6 %	endc.	r05.8e.	3
ReproSil 80 ODS-1, 3 µm	7 %	part. endc	r03.91.	5
ReproSil 80 ODS-1, 5 µm	7 %	part. endc	r05.91.	3
ReproSil 80 ODS-1, 10 µm	7 %	part. endc	r00.91.	3
ReproSil 80 ODS-2, 3 µm	12 %	endc.	r03.92.	5
ReproSil 80 ODS-2, 5 µm	12 %	endc.	r05.92.	3
ReproSil 80 ODS-2, 10µm	12 %	endc.	r00.92.	3
ReproSil 80 NH2, 3 µm	2 %		r03.a0.	5
ReproSil 80 NH2, 5 µm	2 %		r05.a0.	3
ReproSil 80 Diol, 5 µm	(OH-phase)		r05.d0.	3
ReproSil 80 CN, 3 µm	3.5 %		r03.c0.	5
ReproSil 80 CN, 5 µm	3.5 %		r05.c0.	5
ReproSil 80 SAX, 5 µm	(4 % C, strong anion exchanger)		r05.sa.	4
ReproSil 80 SAX, 10 µm	(strong anion exchanger)		r00.sa.	4
ReproSil 80 SAX-2, 5 µm	(4 % C, strong anion exchanger, ultrapur)		r05.sa2.	4
ReproSil 80 SCX, 5 µm	(6 % C, strong cation exchanger)		r05.sc.	4
ReproSil 80 SCX, 10 µm	(6 % C, strong cation exchanger)		r00.sc.	4
ReproSil Polyamin, 3 µm	(for sugars and for Proteins-WAX)		r33.ap.	6
ReproSil Polyamin, 5 µm	(for sugars and for Proteins-WAX)		r35.ap.	5

ReproSil® 70, 100, 300 (Maisch)

Porous spherical silica: 3, 5, 10 µm

Pore diameter: 70, 100, 300 Å°

Surface area: 500, 280, 100 m²/g

Pore volume: 0.9, 1.1, 1.1 ml/g

Purity: Na: 50 ppm, Fe: 4 ppm, Pb: < 1ppm

70Å° Pores	% Carbon	endcapping	Mat.No.:	Price group
ReproSil 70 Si, 5 µm			r05.06.	4
ReproSil 70 C18, 3 µm	20 %	endc.	r03.96.	5
ReproSil 70 C18, 5 µm	20 %	endc.	r05.96.	4
ReproSil 70 C8, 5 µm	14 %	endc.	r05.86.	4
ReproSil 70 C4, 5 µm	10 %	endc.	r05.56.	4
ReproSil 70 Phenyl, 5 µm	16 %	endc.	r05.p6.	4
ReproSil 70 CN, 5 µm	10 %		r05.c6.	4
ReproSil 70 Diol, 5 µm	4 %		r05.d6.	4
ReproSil 70 NH2, 5 µm	5 %		r05.a6.	4

100 Å Pores.**Very well suited for preparative columns. Very competitively priced.**

ReproSil 100 Si, 3 µm			r13.06.	4
ReproSil 100 Si, 5 µm			r15.06.	2
ReproSil 100 Si, 10 µm			r10.06.	2
ReproSil 100 Si, 15 µm			r115.06.	2
ReproSil 100 C4, 3 µm	5 %	endc.	r13.46.	4
ReproSil 100 C4, 5 µm	5 %	endc.	r15.46.	2
ReproSil 100 C4, 10 µm	5 %	endc.	r10.46.	2
ReproSil 100 C8, 3 µm	8 %	endc.	r13.86.	4
ReproSil 100 C8, 4 µm	8 %	endc.	r14.86.	4
ReproSil 100 C8, 5 µm	8 %	endc.	r15.86.	2
ReproSil 100 C8, 10 µm	8 %	endc.	r10.86.	2
ReproSil 100 C8-AB, 5 µm	12 %	endc.	r15.8b	3
ReproSil 100 C18, 3 µm	15 %	endc.	r13.96.	4
ReproSil 100 C18, 4 µm	15 %	endc.	r14.96.	4
ReproSil 100 C18, 5 µm	15 %	endc.	r15.96.	2
Reprosil 100 C18, 7 µm	15 %	endc.	r17.96	2
ReproSil 100 C18, 10 µm	15 %	endc.	r10.96.	2
ReproSil 100 C18, 15 µm	15 %	endc.	r115.96.	2
ReproSil 100 C18, 30 µm	15 %	endc.	r130.96.	2
ReproSil 100 C18, 50 µm	15 %	endc.	r150.96.	2
Reprosil Amid-C18 ABZ, 3 µm	(Altern. to Supelcosil ABZ) USP-L60		r23.ace.	7
Reprosil Amid-C18 ABZ, 5 µm	(Altern. to Supelcosil ABZ) USP-L60		r25.ace.	6
ReproSil C18-MP, 5 µm	(Alternative to MP-Gel ODS) endc.		r15.9mp.	5
ReproSil 100 C18-AB, 5 µm	18 %	endc.	r05.9b.	4
ReproSil 100 ODS-A, 3 µm	16 %	endc.	r13.9a.	4
ReproSil 100 ODS-A, 5 µm	16 %	endc.	r15.9a.	2
ReproSil 100 ODS-AQ, 3 µm	13 %	pol Gr.+endc.	r13.9aq.	5
ReproSil 100 ODS-AQ, 5 µm	13 %	pol Gr.+endc.	r15.9aq.	4
ReproSil 100 Phenyl, 3 µm	9 %	endc.	r13.p6.	4
ReproSil 100 Phenyl, 5 µm	9 %	endc.	r15.p6.	2
ReproSil 100 Phenyl, 10 µm	9 %	endc.	r10.p6.	2
ReproSil 100 CN, 3 µm	2 %		r13.c6.	4
ReproSil 100 CN, 5 µm	2 %		r15.c6.	2
ReproSil 100 CN, 10 µm	2 %		r10.c6.	2
ReproSil 100 NH2, 3 µm	3 %		r13.a6.	4
ReproSil 100 NH2, 5 µm	3 %		r15.a6.	2
ReproSil 100 NH2, 10 µm	3 %		r10.a6.	2
Reprosil 100 DNH, 3 µm	5 % (Diamin)		r13.dnh.	5
Reprosil 100 DNH, 5 µm	5 % (Diamin)		r15.dnh.	3
ReproSil 100 Diol, 5 µm	3 %		r15.d6.	2
ReproSil 100 Diol, 10 µm	3 %		r10.d6.	2
Reprosil 100 C30-m, 5 µm	(monomer, endc.)		st15.3m.	6
ReproSil DIBS-RP, 5 µm	(for Direct Injection of Biological Samples)		r15.dibs.	7
ReproSil 100 CAT, 5 µm	(mono- + divalent Cations in 1 run)		r15.cat.	7
ReproSil 100 CAT, 7 µm	(mono- + divalent Cations in 1 run)		r17.cat.	7
WP-200 /300: for Proteins and Peptides				
ReproSil 200 C18, 5 µm	9 %	endc.	r25.96.	3

ReproSil 300 C4, 5 µm	2.5 %	endc.	r35.46.	3
ReproSil 300 C4, 10 µm	2.5 %	endc.	r30.46.	3
ReproSil 300 C8, 5 µm	4 %C	endc.	r35.86.	3
ReproSil 300 C8, 10 µm	4 %C	endc.	r30.86.	3
ReproSil 300 C18, 5 µm	6 %C	endc.	r35.96.	3
ReproSil 300 C18, 10 µm	6 %C	endc.	r30.96.	3
ReproSil 300 DEAE , 5 µm			r35.deae.	6

ReproSil® 100 C18-XBD (Maisch)

Porous spherical silica: 5, 10 µm
Pore diameter: 100 Å^o
Surface area: 300 m²/g
Pore volume: 0.9 ml/g

Well suited for preparative columns. High sample recovery. Long column life time.

XBD = eXtra Base-deactivated with 2 endcappings.

ReproSil 100 C18-XBD, 5 µm	16 %	double endc.	r15.9x.	3
ReproSil 100 C18-XBD, 10 µm	16 %	double endc.	r10.9x.	3

ReproSil® Saphir (Maisch)

Porous spherical silica: 1.8 µm, 2.2 µm, 3 µm, 5 µm, 10 µm
Pore diameter /Surface area:
100 Å^o / 400 m²/g
300 Å^o / 100 m²/g
Ultrapure phases: Purity: Ca, Mg, Al, Ti, Fe: all < 1 ppm

Specifically designed for pharmaceutical and biotechnical separations. Fully validated phases.

	% Carbon	endcapping	Mat.No.:	Price group
Reprosil Saphir 100 C18, 1.5 µm	20 %	endc.	ra115.9e	7
Reprosil Saphir 100 C18, 1.8 µm	20 %	endc.	ra118.9e	7
Reprosil Saphir 100 C18 , 2.2 µm	20 %	endc.	ra122.9e	7
Reprosil Saphir 100 C18, 3 µm	20 %	endc.	ra13.9e	5
Reprosil Saphir 100 C18, 5 µm	20 %	endc.	ra15.9e	4
Reprosil Saphir 100 C18, 10 µm	20 %	endc.	ra10.9e	4
Reprosil Saphir 100 C8, 5 µm	12 %	endc.	ra15.8e	4
Reprosil Saphir 100 C8, 10 µm	12 %	endc.	ra10.8e	4
Reprosil Saphir 100 C4, 5 µm	8 %	endc.	ra15.4e	4
Reprosil Saphir 100 C4, 10 µm	8 %	endc.	ra10.4e	4
Reprosil 100 Saphir NH2, 5 µm	4 %	not endc.	ra15.ao	4
Weak Cation exchanger (CM)				
(with 300Å ^o for Proteins and Enzymes)				
Reprosil Saphir 300 CM, 5 µm	(Carboxymethyl, WCX)		ra35.cm	4
Reprosil Saphir 300 CM, 15 µm	(Carboxymethyl, WCX)		ra315.cm	4

Strong cation exchanger (SCX) : 100 Å + 300 Å

Reprosil Saphir 300 SCX, 5 µm	(Sulfopropyl, SP)	ra35.scx	4
Reprosil Saphir 300 SCX, 15 µm	(Sulfopropyl, SP)	ra315.scx	4
Reprosil Saphir 100 SCX, 3 µm	(Sulfopropyl, SP)	ra13.scx	5
Reprosil Saphir 100 SCX, 5 µm	(Sulfopropyl, SP)	ra15.scx	4
Reprosil Saphir 100 SCX, 10 µm	(Sulfopropyl, SP)	ra10.scx	4

Strong Anion Exchanger, (Organic acids: Carboxylic + Sulfonic acids, Pesticides, Herbicides, Pharmaceuticals, Nucleotides)

Reprosil Saphir 100 SAX, 5 µm	(Strong Anion eXchanger)	ra15.sax	4
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(pH range: 2-7, Citrate- or phosphate buffers (+ org. modifier), Example for Eluent: 0,1 M KH₂PO₄, pH 3)

Reprospher (Maisch)**1.8 µm – 30 µm Particles**

Porous spherical silica: 1.8, 3, 5, 10 µm

Pore diameter: 100 Å

Surfac area: 350 m²/g

Ultrapure phases: Purity: 99,999

Excellent efficiency. Ideal for LC-MS separations.

Ca, Mg, AL, Fe, Zr, Ti: all < 10 ppm

Specifically designed for pharmaceutical and biotechnical separations.**Reprospher: Up and Down scaling LC-Phases, 1.8 µm - 30 µm**

	% Carbon	endcapping	Mat.No.:	Price group
Reprospher 100 C18, 1.8 µm	16 %	endc.	rs118.9e.	7
Reprospher 100 C18, 2 µm	16 %	endc.	rs12.9e.	7
Reprospher 100 C18, 2.5 µm	16 %	endc.	rs125.9e.	6
Reprospher 100 C18, 3 µm	16 %	endc.	rs13.9e.	4
Reprospher 100 C18, 4 µm	16 %	endc.	rs14.9e.	4
Reprospher 100 C18, 5 µm	16 %	endc.	rs15.9e.	3
Reprospher 100 C18, 10 µm	16 %	endc.	rs10.9e.	3
Reprospher 100 C18-DE, 1.8 µm	16 %	double endc.	rs118.9de.	7
Reprospher 100 C18-DE, 2 µm	16 %	double endc.	rs12.9de.	7
Reprospher 100 C18-DE, 2.5 µm	16 %	double endc.	rs125.9de.	6
Reprospher 100 C18-DE, 3 µm	16 %	double endc.	rs13.9de.	4
Reprospher 100 C18-DE, 5 µm	16 %	double endc.	rs15.9de.	3
Reprospher 100 C18-DE, 7 µm	16 %	double endc.	rs17.9de.	3
Reprospher 100 C18-DE, 10 µm	16 %	double endc.	rs10.9de.	3
Reprospher 100 C18-Aqua, 1.8 µm	12 %	pol.Gr.+ endc.	rs118.9aq.	7
Reprospher 100 C18-Aqua, 2 µm	12 %	pol.Gr.+ endc.	rs12.9aq.	7
Reprospher 100 C18-Aqua, 2.5 µm	12 %	pol.Gr.+ endc.	rs125.9aq.	6
Reprospher 100 C18-Aqua, 3 µm	12 %	pol.Gr.+ endc.	rs13.9aq.	5
Reprospher 100 C18-Aqua, 5 µm	12 %	pol.Gr.+ endc.	rs15.9aq.	4
Reprospher 100 C18-Aqua, 10 µm	12 %	pol.Gr.+ endc.	rs10.9aq.	4
Reprospher 100 C18-Aqua, 30 µm	12 %	pol.Gr.+ endc.	rs130.9aq.	2
Reprospher 100 C18-Aqua-DE, 3 µm	12 %	pol.Gr.+ double endc.	rs13.9aqd.	5
Reprospher 100 C18-NE, 1.8 µm	15 %	not endc.	rs118.90.	7
Reprospher 100 C18-NE, 5 µm	15 %	not endc.	rs15.90	3
Reprospher 100 C18-Phenyl, 5 µm	(C18+Phenyl)	endc.	rs15.9ph	5
Reprospher 100 C18-Phenyl, 10 µm	(C18+Phenyl)	endc.	rs10.9ph	5
Reprospher 100 C18-WCX, 5 µm	(C18+ Weak Anion exch., for Peptides)		rs15.9ac	5

Reprospher 100 C18-WCX, 10 µm	(C18+ Weak Anion exch., for Peptides)	rs10.9ac	5
Reprospher 100 C18-TDE, 3 µm	20 % polymer-C18-de	rs13.9tde	5
Reprospher 100 C18-TDE, 5 µm	20 % polymer-C18-de	rs15.9tde	4
Reprospher 100 C18-TDE, 10 µm	20 % polymer-C18-de	rs10.9tde	4
Reprospher 100 C18-TN, 5 µm	17 % polymer-C18, not endc.	rs15.9tn	4
Reprospher 100 Phenyl, 1.8 µm	9 % double endc.	rs118.pde.	7
Reprospher 100 Phenyl, 2 µm	9 % double endc.	rs12.pde.	7
Reprospher 100 Phenyl, 2.5 µm	9 % double endc..	rs125.pde.	6
Reprospher 100 Phenyl, 3 µm	9 % double endc..	rs13.pde.	4
Reprospher 100 Phenyl, 5 µm	9 % double endc.	rs15.pde.	3
Reprospher 100 Phenyl, 10 µm	9 % double endc.	rs10.pde.	3
Reprospher 100 Phenyl-Hexyl, 3 µm	13 %	rs13.ph.	6
Reprospher 100 Phenyl-Hexyl, 5 µm	13 %	rs15.ph.	5
Reprospher 100 Phenyl-Hexyl, 10 µm	14 % (for prep.)	rs10.ph.	4
Reprospher 100 Phenyl-Hexyl-e, 5 µm	13 % endc.	rs15.phe.	5
Reprospher 100 C6-TDE, 5 µm	8 % trifunct.- endc.	rs15.6tde.	4
Reprospher 100 C4-Aqua, 5 µm	6 % pol.Gr.+ endc.	rs15.4aq.	4
Reprospher 100 C4-Aqua, 10µm	6 % pol.Gr.+ endc.	rs10.4aq.	4
Reprospher 100 C4-DE, 5 µm	7 % double endc..	rs15.4de.	3
Reprospher 100 CN, 1.8 µm	7 %	rs.118.C0.	7
Reprospher 100 CN, 2 µm	7 %	rs12.C0.	7
Reprospher 100 CN, 2.5 µm	7 %	rs125.C0.	6
Reprospher 100 CN, 3 µm	7 %	rs.13.C0.	4
Reprospher 100 CN, 5 µm	7 %	rs.15.C0.	3
Reprospher 100 CN-DE, 5 µm	7 % double endc.	rs15.cde.	3
Reprospher 100 Diol-DE, 5 µm	7 % double endc.	rs15.dde.	3
Reprospher 100 NH2, 1.8 µm	4 %	rs118.ade.	7
Reprospher 100 NH2, 2 µm	4 %	rs12.ade.	7
Reprospher 100 NH2, 3 µm	4 %	rs13.ade.	4
Reprospher 100 NH2,5 µm	4 %	rs15.ade.	3
Reprospher 100 NH2, 10 µm	4 %	rs10.ade.	3
Reprospher 100 PEI, 3 µm	(Polyethylenimine-Phase)	rs13.pei.	6
Reprospher 100 PEI, 5 µm	(Polyethylenimine-Phase)	rs15.pei.	5
Reprospher 100 SAX, 5 µm	(Strong Anion eXchanger)	rs15.sax.	5
Reprospher 100 Si, 1.8 µm		rs118.00.	7
Reprospher 100 Si, 2 µm		rs12.00.	7
Reprospher 100 Si, 2.5 µm		rs125.00.	6
Reprospher 100 Si, 3 µm		rs13.00.	4
Reprospher 100 Si, 5 µm		rs15.00.	3
Reprospher 100 Si,10 µm		rs10.00.	3
Reprospher HILIC-P, 3 µm	HILIC for <u>P</u> eptides	rs13.HCP.	7
Reprospher HILIC-P, 5 µm	HILIC for <u>P</u> eptides	rs15.HCP.	6
Reprospher HILIC-P, 10 µm	HILIC for <u>P</u> eptides	rs10.HCP.	6
Reprospher HILIC-A, 3 µm	HILIC for <u>A</u> cids	rs13.HCA.	7
Reprospher HILIC-A, 5 µm	HILIC for <u>A</u> cids	rs15.HCA.	6
Reprospher HILIC-A, 10 µm	HILIC for <u>A</u> cids	rs10.HCA.	6
Reprospher Acidosil-S, 5 µm	SO3H-Silica	rs15.sh.	3
Reprospher Acidosil-S, 10 µm	SO3H-Silica	rs10.sh.	3
Reprospher Acidosil-C, 5 µm	COOH-Silica	rs15.ch.	3
Reprospher Acidosil-C, 5 µm	COOH-Silica	rs10.ch.	3

Wide Pore Phases for Peptides and Proteins:

200 Å Pores

Repospher 200 Si, 5 µm			rs25.00.	5
Repospher 200 C18-TN, 5 µm	11 %	polymer-C18, not endc.	rs25.9tn.	5
Repospher 200 C18-TN, 7 µm	11 %	polymer-C18, not endc.	rs27.9tn.	5
Repospher 200 C18-TN, 10 µm	11 %	polymer-C18, not endc.	rs20.9tn.	5
Repospher 200 C18-DE, 2.5 µm	10 %	double endc.	rs225.9de.	7
Repospher 200 C18-DE, 3 µm	10 %	double endc.	rs23.9de.	4
Repospher 100 C18-WCX, 5 µm	(C18+ Weak Anion exch., for Peptides)		rs15.9ac	5
Repospher 100 C18-WCX, 10 µm	(C18+ Weak Anion exch., for Peptides)		rs10.9ac	5
Repospher 200 C18-Aqua, 3 µm	5 %	pol.Gr.+ endc.	rs23.9aq.	4
Repospher 200 C18-Aqua, 5 µm	5 %	pol.Gr.+ endc.	rs25.9aq.	4

300 Å Pores

Repospher 300 C4, 1.8 µm	2.5 %	endc.	rs318.4e.	7
Repospher 300 C4, 2 µm	2.5 %	endc.	rs32.4e.	7
Repospher 300 C4-DE, 2.5 µm	3 %	double endc.	rs35.4de.	7
Repospher 300 C4-DE, 3 µm	3 %	double endc.	rs33.4de.	5
Repospher 300 C4-DE, 5 µm	3 %	double endc.	rs35.4de.	4
Repospher 300 C8, 1.8 µm	4 %	endc.	rs32.8e.	7
Repospher 300 C8, 2 µm	4 %	endc.	rs32.8e.	7
Repospher 300 C8-TN, 5 µm	5 %	polymer-C8, not endc.	rs35.8tn.	4
Repospher 300 C18, 1.8 µm	7 %	endc.	rs32.9e.	7
Repospher 300 C18, 2 µm	7 %	endc.	rs32.9e.	7
Repospher 300 C18-DE, 2.5 µm	7 %	double endc.	rs325.9de.	7
Repospher 300 C18-DE, 3 µm	7 %	double endc.	rs33.9de.	5
Repospher 300 C18-DE, 5 µm	7 %	double endc.	rs35.9de.	4
Repospher 300 C18-Aqua, 5 µm	4 %	pol.Gr.+ endc.	rs35.9aq.	4
Repospher 300 C18, 5 µm	6 %	endc.	rs35.9e.	4
Repospher 300 C18-TN, 5 µm	10 %	polymer-C18, not endc.	rs35.9tn.	4
Repospher 300 C18-TN, 30 µm	10 %	polymer-C18, not endc.	rs330.9tn.	2
Repospher 300 Phenyl-DE, 3 µm	5 %	double endc.	rs33.pde.	5

Reposil[®] Gold-XBD (Maisch)

1.8 µm – 10 µm Particles

Porous spherical silica: 1.8 µm / 3 µm / 5 µm / 10 µm

Pore diameter: 100 Å

Surface area: 350 m²/g

Ultrapure phases: Purity: 99,999

Perfect for LC-MS separations.

	% Carbon	endcapping	Mat.No.:	Price group
Reposil Gold 100 C18-XBD, 1.8 µm	16.5 %	Extra Base Deactivated	G118.9x	7
Reposil Gold 100 C18-XBD, 2.0 µm	16.5 %	Extra Base Deactivated	G12.9x	7
Reposil Gold 100 C18-XBD, 3 µm	16.5 %	Extra Base Deactivated	G13.9x	6
Reposil Gold 100 C18-XBD, 5 µm	16.5 %	Extra Base Deactivated	G15.9x	5
Reposil Gold 100 C18-XBD, 10 µm	16.5 %	Extra Base Deactivated	G10.9x	5

Reprosil Gold 100 C8-XBD, 1.8 µm	10.5 %	Extra Base Deactivated	G118.8x	7
Reprosil Gold 100 C8-XBD, 2.0 µm	10.5 %	Extra Base Deactivated	G12.8x	7
Reprosil Gold 100 C8-XBD, 3 µm	10.5 %	Extra Base Deactivated	G13.8x	6
Reprosil Gold 100 C8-XBD, 5 µm	10.5 %	Extra Base Deactivated	G15.8x	5
Reprosil Gold 100 C8-XBD, 10 µm	10.5 %	Extra Base Deactivated	G10.8x	5

Equisil[®] (Maisch) Alternative to Supelcosil + Hypersil (Gold)

Porous spherical silica: 5 µm
Pore diameter: 120 Å^o
Pore volume: 0.65 ml / g
Surface area: 180 m²/g
Alternative to Hypersil I / Supelcosil / Pinnacle!

	% Carbon	endcapping	Mat.No.:	Price group
Alternatives to Hypersil and Supelcosil-LC:				
Equisil Si, 5 µm			e25.00.	3
Equisil ODS, 3 µm	10 %	endc.	e23.9e.	4
Equisil ODS, 3 µm	10 %	endc.	e23.9e.	4
Equisil ODS, 5 µm	10 %	endc.	e25.9e.	3
Equisil ODS, 10 µm	10 %	endc.	e20.9e.	3
Equisil MOS, 3 µm	6.5 %	not endc.	e23.80.	4
Equisil MOS, 5 µm	6.5 %	not endc.	e25.80.	3
Equisil MOS, 10 µm	6.5 %	not endc.	e20.80.	3
Equisil MOS-2, 3 µm	6.5 %	endc.	e23.8e.	4
Equisil SAS, 5 µm	3 %	C1- phase	e25.10.	3
Equisil APS, 3 µm	(NH ₂ -Phase)		e23.a0.	4
Equisil APS, 5 µm	(NH ₂ -Phase)		e25.a0.	3
Equisil CPS, 5 µm	(CN-Phase)		e25.c0.	3
Equisil CPS-2, 3 µm	(CN-Phase, endc.)		e23.ce.	4
Alternatives to Hypersil-BDS , Supelcosil-DB and Pinnacle DB:				
Equisil BDS C18, 3 µm	11 %	endc.	e23.9b.	4
Equisil BDS C18, 5 µm	11 %	endc.	e25.9b.	3
Equisil BDS C8, 3 µm	7 %	endc.	e23.8b.	4
Equisil BDS C8, 5 µm	7 %	endc.	e25.8b.	3
Equisil BDS Phenyl, 5 µm	5 %	endc.	e25.pb.	3
Alternatives to Hypersil Gold:				
Equisil Gold C18, 3 µm		endc.	e23.9g	5
Equisil Gold C18, 5 µm		endc.	e25.9g	4
Equisil Gold C18, 10 µm		endc.	e20.9g	4
Equisil Gold C8, 3 µm		endc.	e23.8g	5
Equisil Gold C8, 5 µm		endc.	e25.8g	4
Equisil Gold C8, 10 µm		endc.	e20.8g	4

Reprobond (Maisch)

Porous spherical silica: 5 µm / 10 µm
Pore diameter: 120 Å^o
Surface area: 300 m²/g
Alternative to µBondapak!

	endcapping	Mat.No.:	Price group
Reprobond C18, 10 µm	endc.	rb20.9e.	5
Reprobond C18, 5 µm	endc.	rb25.9e.	6
Reprobond Phenyl, 10 µm	endc.	rb20.pe.	5
Reprobond NH2, 10 µm		rb20.a0.	5
Reprobond CN, 10 µm		rb20.ce.	5

Repropak (Maisch)

Porous silica: 4 µm

Alternative to Novapak!

	endcapping	Mat.No.:	Price group
ReproPak C18, 4 µm	endc.	rp4.9e.	5
ReproPak C8, 4 µm	endc.	rp4.8e.	5
ReproPak Phenyl, 4 µm	endc.	rp4.pe.	5

ReproKrom (Maisch)

Porous silica with 100 Å° pores.

Alternative to Kromasil!

	endcapping	Mat.No.:	Price group
ReproKrom Si, 5 µm		rk15.00.	3
ReproKrom Si, 10 µm		rk10.00.	2
ReproKrom C18, 3 µm	endc.	rk13.9e.	5
ReproKrom C18, 5 µm	endc.	rk15.9e.	3
ReproKrom C18, 10 µm	endc.	rk10.9e.	2
ReproKrom C8, 5 µm	endc.	rk15.8e.	3
ReproKrom C8, 10 µm	endc.	rk10.8e.	2

Ultrasep® ES (Dr.Maisch, formerly from Sepserv / Berlin)

Porous, spherical silica.

Extreme chemical purity. High Inertness. Enhanced hydrolytic resistance. Excellent packing properties. Long time stability. Remarkable Selectivity.

Standard-Phases and Taylor-made Phases!

Standard-Phases

Ultrasep ES 100 Si,	Ultrasep ES 100 C18,	Ultrasep ES 100 C8,
Ultrasep ES 100 C1,	Ultrasep ES 100 Phenyl,	Ultrasep ES 100 NH2,
Ultrasep ES 100 CN,	Ultrasep ES 100 OH,	

Enviromental Analysis

Ultrasep ES PAH,	PAH-Analysis (EPA and EFSA)
Ultrasep ES PAH-QC,	Quick PAH-Analysis
Ultrasep ES ALD	Aldehydes and Ketones
Ultrasep ES Pest	Pesticides (DIN)
Ultrasep ES Phenoxy carb	Herbicides
Ultrasep ES Phen	EPA- and BTXE-Phenols
Ultrasep ES Ex	Explosives - EPA
Ultrasep ES AZO	Azo Dyes
Ultrasep ES AP	Hydrocarbons in Diesel Fuels
Ultrasep ES Amin	Amines

Ultrasep ES DIISO

Diisocyanates

Food stuff Analysis

Ultrasep ESD FS

Fruit acids

Ultrasep ES WAX FS

Fruit acids

Ultrasep ES FS

Fatty acids

Ultrasep ES Sacch

Mono- and Disaccharides

Ultrasep ES Vit W

Water soluble Vitamines

Ultrasep ES Vit F

Fat soluble Vitamines

Ultrasep ES Vit T-2

Tocopherols

Ion Exchangers

Ultrasep ES SAX W

Anorganic ions, according to DIN

Ultrasep ES SAX W33

Strong anion exchanger for Ascorbic acid

Ultrasep ES SCX75

Alkaline Earth Ions

Ultrasep ES SCXPM

Strong Cation Exchanger, polymeric, for org. Acids

Biochemical, Clinical-Chemical and Pharmaceutical Analysis

Ultrasep ES Pharm-RP18e + RP8e

Pharmaceutica

Ultrasep ES MLD

(MLD=Monolayer dense), Pharmaceutica

Ultrasep ES PFP

Pentafluorphenyl-Phase,

Ultrasep ES Pharm, PFP

Nucleocompunds-Analysis

Ultrasep ESD Chol

Cholesterolesters

Shield-Phases with embedded -Groups:

Ultrasep ES Amid RP18A

Amid C18-Phase (Embedded Group)

Ultrasep ES Amid H RP18PA

Embedded Phase with Urea group

Ultrasep ES Chair

RP-Phase with pos. Charge (Cephalosporines)

Ultrasep ES-C10-Omega-COOH

RP-Phase with 2 Carboxylic groups

Other special columns

Ultrasep ES Aminotetraol

Stereoisomeres from org. N-Oxides, for Sugar-Analysis

Ultrasep ES RP8F

Fluoralkyl- (C8F17)-Phase, Alternative RP-selectivity

Ultrasep ES PEO

Polyethylenoxide-Phase for RP- and NP-Separations

Ultrasep ES RP18-M500

Methyloctadecylsilica-Gel, 5 % C,

Ultrasep ES C30-DM

DiMethyl-C30, for Chlorophylls, etc.

Production of Taylor-made Phases: Herstellung optimaler Trennsäulen: G.J.Eppert, I.Schinke, LCGC Europe, Band 16, 2003, Heft 10, 698 – 705, G.J.Eppert, P.Heitmann: GIT 54 (2010) Heft: 34-35

Stability[®] (Maisch)

Porous spherical silica: 5, 10 µm

Pore diameter: 100, 300 Å°

Surface area: 350, 100 m²/g

Phases with very special modifications!

Modifikation	endcapping		Mat.No.:	Price group
Stability 100 C30, 3 µm	(polymer)	endc.	st13.30.	8
Stability 100 C30, 5 µm	(polymer)	endc.	st15.30.	7
Stability 100 C30-NE, 5 µm	(polymer)	not endc.	st15.3p.	7
Stability 100 C30-m, 5 µm	(monomer)	endc.	st15.3m.	7
Stability 100 BS-C13, 5 µm	(with basic Spacer)	endc.	st15.13.	7
Stability 100 BS-C17, 3 µm	(with basic Spacer)	endc.	st13.17.	8
Stability 100 BS-C17, 5 µm	(with basic Spacer)	endc.	st15.17.	7

Stability 100 BS-C17, 10 µm	(with basic Spacer)	endc.	st10.17.	7
Stability 100 BS-C23, 5 µm	(with basic Spacer)	endc.	st15.23.	7
Stability 120 BS-C23, 5 µm	(with basic Spacer)	not endc.	st25.23.	7
Stability 120 BS-C23, 3 µm	(with basic Spacer)	not endc.	st23.23.	8
Stability 120 BS-C23, 1.5 µm	see under: <i>Gold-Turbo BS-C23</i>			
Stability 120 BS-C23-e, 5 µm	(with basic Spacer)	endc.	st25.23e.8	7
Stability 300 BS-C23, 5 µm	(with basic Spacer)	not endc.	st35.23.	7
Stability 100 Amid-C25, 5 µm	(with Amid-Group)	endc.	st15.a25.	6
Stability 100 Amid-C18, 3 µm	(mit Amid-Gruppe)	endc.	st13.a18.	8
Stability 100 Amid-C18, 5 µm	(with Amid-Group)	endc.	st15.a18.	6
Stability 100 Amid-C16, 3 µm	(mit Amid-Gruppe)	endc.	st13.a16.	8
Stability 100 Amid-C16, 5 µm	(with Amid-Group)	endc.	st15.a16.	6
Stability 120 Amid-C12, 5 µm	(with Amid-Group)	not endc.	st25.a12.	7
Stability 120 Amid-C12, 3 µm	(with Amid-Group)	not endc.	st23.a12.	8
Stability 120 Amid-C12, 1.5 µm	see under: <i>Gold-Turbo Amid-C12</i>			
Stability ABZ-Amid-C18, 3 µm	(Altern. to Supelcosil ABZ)	endc.	st23.eps.	7
Stability ABZ-Amid-C18, 5 µm	(Altern. to Supelcosil ABZ)	endc.	st25.eps.	6
Stability Polyamine, 3 µm	(for sugars)	polymer	st33.pa.	8
Stability Polyamine, 5 µm	(for sugars)	polymer	st35.pa.	6
Stability 100 Alumina, 5 µm			st15.al.	6

Gold-Turbo® (Maisch)

Spherical silica for High Speed HPLC: **1.5 µm Particle.**

Porous and unporous Phases: 80 Å / 100 Å / 120 Å

Hardware for 100 ODS: 33 x 4.6 mm in Gold.

Porous Phases:

	% Carbon	endcapping	Mat.Nr.:	Price:33 x4.6 (4,3,2)mm
Gold-Turbo 100 Si, 1.5 µm			g12.00.	
Gold-Turbo 100 ODS, 1.5 µm	11 %	not endc.!	g12.90.	
Gold-Turbo 100 ODS-H, 1.5 µm	20 %	endc.	gt115.9h	
Gold-Turbo 80 ODS-3, 1.5 µm	12 %	endc.	g02.93	
Gold-Turbo 120 BS-C23, 1.5 µm	(with basic Spacer)	not endc.	g22.23	
Gold-Turbo Amid-C12, 1.5 µm	(with Amid-Group)	endc.	g22.a12	
Gold-Turbo Fluosil, 1.5 µm	(Alkylfluoro Phase)	endc.	g22.fe	
Gold-Turbo 120 ODS, 1.5 µm	(like Equisil-ODS)	endc.	g22.eq	

Not porous Phases:

Gold-Turbo ESM C18, 1.5 µm	(Alternative to Micra C18)	endc.	g015.9e.
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Reprosil - Fluosil® (Maisch)

Fluorinated Phases

Porous spherical, fluorinated silicas: 2.2 µm, 3 µm and 5 µm

	endcapping	Mat.No.:	Price group
Reprosil Fluosil C8, 3 µm (C8F13H4)	endc.	f113.8e	7
Reprosil Fluosil C8, 5 µm (C8F13H4)	endc.	f115.8e	7
Reprosil Fluosil C8-NE, 5 µm (C8F13H4)	nicht endc.	f115.80	7

Reprosil Fluosil RP8F, 5 µm (C8F17)		f115.8f	7
Reprosil Fluosil 60 PFP, 3 µm (Pentafluorphenyl)	endc.	f103.pfp	7
Reprosil Fluosil 60 PFP, 5 µm (Pentafluorphenyl)	endc.	f105.pfp	6
Reprosil Fluosil 120 PFP, 2.2 µm (Pentafluorphenyl-USP-L43)	endc.	f1122.pfp	7
Reprosil Fluosil 100 PFP, 3 µm (Pentafluorphenyl-USP-L43)	endc.	f113.pfp	7
Reprosil Fluosil 100 PFP, 5 µm (Pentafluorphenyl-USP-L43)	endc.	f115.pfp	6
Reprosil Fluosil 100 PFP, 10 µm (Pentafluorphenyl-USP-L43)	endc.	f110.pfp	6
Reprosil Fluosil 120E, 5 µm, (Tridecafluoro-Dimethyl-Heptyl-Silan)	endc.	f115.13	

ReproPart (Maisch)

Alternative to Partisil

Porous silica:

Alternative to Partisil!

ReproPart ODS-3, 5 µm	(10 % C)	endc.	p05.93.	6
ReproPart ODS-3, 10 µm	(10 % C)	endc.	p00.93.	6
ReproPart SAX, 10 µm	Strong Anion Exchanger		p00.sa.	8
ReproPart SCX, 10 µm	Strong Cation Exchanger		p00.sc.	8

ReproShell[®] (Maisch)

Core-Shell Silica

Coreshell RP-Phase with nonporous Core and porous Shell.

Particle size: 2.6 µm

Carbon loading: 5 %

pH-Stability: 2 - 10

ReproShell C18, 2.6 µm, endcapped.

ReproShell C18, 2.6 µm, 150 x 4.6 mm	Art.Nr.: cs26.9e.s1546
ReproShell C18, 2.6 µm, 100 x 4.6 mm	Art.Nr.: cs26.9e.s1046
ReproShell C18, 2.6 µm, 50 x 4.6 mm	Art.Nr.: cs26.9e.s0546

ReproShell C18, 2.6 µm, 150 x 4 mm	Art.Nr.: cs26.9e.s1504
ReproShell C18, 2.6 µm, 100 x 4 mm	Art.Nr.: cs26.9e.s1004
ReproShell C18, 2.6 µm, 50 x 4 mm	Art.Nr.: cs26.9e.s0504

ReproShell C18, 2.6 µm, 150 x 3 mm	Art.Nr.: cs26.9e.s1503
ReproShell C18, 2.6 µm, 100 x 3 mm	Art.Nr.: cs26.9e.s1003
ReproShell C18, 2.6 µm, 50 x 3 mm	Art.Nr.: cs26.9e.s0503

ReproShell C18, 2.6 µm, 150 x 2 mm	Art.Nr.: cs26.9e.s1502
ReproShell C18, 2.6 µm, 100 x 2 mm	Art.Nr.: cs26.9e.s1002
ReproShell C18, 2.6 µm, 50 x 2 mm	Art.Nr.: cs26.9e.s0502

Reprosil -Chiral (Maisch)

(Same prices for 4.6 mm, 4.0 mm, 3.0 mm and 2.0 mm iD)

Reprosil Chiral-NR (Immobilized brush-type phases , covalently bonded)

ReproSil Chiral-NR, 5 µm, Chiral separations in NP and RP-Modus (for aromatic compounds with O near Chiral-Centre)	(PN:r15.nr)	250 x 4.6 mm 150 x 4.6 mm 100 x 4.6 mm
ReproSil Chiral-NR, 8 µm, Chiral separations in NP and RP-Modus	(PN:r18.nr)	250 x 4.6 mm

(for aromatic compounds with O near Chiral-Centre)	150 x 4.6 mm 100 x 4.6 mm 250 x 8 mm 250 x 10 mm 250 x 20 mm
ReproSil Chiral-NR, 12µm, Chiral separations in NP and RP-Modus (PN:r112.nr) (for aromatic compounds with O near Chiral-Centre)	250 x 4.6 mm 150 x 4.6 mm 100 x 4.6 mm 250 x 8 mm 250 x 10 mm 250 x 20 mm
ReproSil Chiral-NR, 15µm, Chiral separations in NP and RP-Modus (PN:r115.nr) (for aromatic compounds with O near Chiral-Centre)	250 x 4.6 mm 150 x 4.6 mm 100 x 4.6 mm 250 x 8 mm 250 x 10 mm 250 x 20 mm
ReproSil Chiral-NR-R, 8 µm, Chiral separations in NP and RP-Modus, (PN:r18.nrr) (for aromatic compounds with O near Chiral-Centre, Inverse Elution order to Reprosil Chiral-NR)	250 x 4.6 mm 150 x 4.6 mm 100 x 4.6 mm 250 x 8 mm 250 x 10 mm 250 x 20 mm
ReproSil Chiral-NR-R, 12 µm, Chiral separations in NP and RP-Modus, (PN:r112.nrr) (for aromatic compounds with O near Chiral-Centre, Inverse Elution order to Reprosil Chiral-NR)	250 x 4.6 mm 150 x 4.6 mm 100 x 4.6 mm 250 x 8 mm 250 x 10 mm 250 x 20 mm

Reprosil Chiral-OM (Cellulose-carbamate-Phases, for RP and NP)

ReproSil Chiral-OM, 3 µm,	Alternative to Daicel OD-3 (PN:r63.om) (USP-L40, Cellulose tris-3,5-dimethylphenylcarbamate mod. Silica)
ReproSil Chiral-OM-R, 3 µm,	Alternative to Daicel OD-3R (PN:r63.omr) (USP-L40, Cellulose tris-3,5-dimethylphenylcarbamate mod. Silica)
ReproSil Chiral-OM, 5 µm,	Alternative to Daicel OD-H (PN:r65.om) (USP-L40, Cellulose tris-3,5-dimethylphenylcarbamate mod. Silica)
ReproSil Chiral-OM-R, 5 µm,	Alternative to Daicel OD-RH (PN:r65.omr) RP-Mode (USP-L40, Cellulose tris-3,5-dimethylphenylcarbamate mod. Silica)
ReproSil Chiral-OM, 10 µm,	Alternative to Daicel OD-H (PN:r60.om) (USP-L40, Cellulose tris-3,5-dimethylphenylcarbamate mod. Silica)

ReproSil Chiral-OM-R, 10 µm, Alternative to Daicel OD-RH (PN:r60.omr)
(USP-L40, Cellulose tris-3,5-dimethylphenylcarbamate mod. Silica)

ReproSil Chiral-OM, 20µm, Alternative to Daicel OD (PN:r620.om)
(USP-L40, Cellulose tris-3,5-dimethylphenylcarbamate mod. Silica)

Reprosil Chiral-AM (Amylose-carbamate-Phases , for RP and NP)

ReproSil Chiral-AM, 3 µm, Alternative to Daicel AD-3 (PN:r63.am)
(USP-L51, Amylose tris-3,5-dimethylphenylcarbamate mod. Silica)

ReproSil Chiral-AM-R, 3 µm, Alternative to Daicel AD-3R (PN:r63.amr)
(USP-L51, Amylose tris-3,5-dimethylphenylcarbamate mod. Silica)

ReproSil Chiral-AM, 5 µm, Alternative to Daicel AD-H (PN:r65.am)
(USP-L51, Amylose tris-3,5-dimethylphenylcarbamate mod. Silica)

ReproSil Chiral-AM-R, 5 µm, Alternative to Daicel AD-RH (PN:r65.amr)
(USP-L51, Amylose tris-3,5-dimethylphenylcarbamate mod. Silica)

ReproSil Chiral-AM, 10 µm, Alternative to Daicel AD (PN:r60.am)
(USP-L51, Amylose tris-3,5-dimethylphenylcarbamate mod. Silica)

ReproSil Chiral-AM-R, 10 µm, Alternative to Daicel AD-R (PN:r60.amr)
(USP-L51, Amylose tris-3,5-dimethylphenylcarbamate mod. Silica)

ReproSil Chiral-AM, 20 µm, Alternative to Daicel AD (PN:r620.am)
(USP-L51, Amylose tris-3,5-dimethylphenylcarbamate mod. Silica)

Reprosil Chiral-AMS (Amylose Tris (S)-A-Methylbenzyl-Carbamate-Phase, for NP- and RP-Mode)

ReproSil Chiral-AMS, 3 µm, (Alternative to Daicel AS-3) (PN:r63.AMS)

ReproSil Chiral-AMS-R, 3 µm, (Alternative to Daicel AS-3R) (PN:r63.AMSR)

ReproSil Chiral-AMS, 5 µm, (Alternative to Daicel AS-H) (PN:r65.AMS)

ReproSil Chiral-AMS-R, 5 µm, (Alternative to Daicel AS-RH) (PN:r65.AMSR)

ReproSil Chiral-AMS, 10 µm, (Alternative to Daicel AS) (PN:r60.AMS)

Reprosil Chiral-CM (Phenyl-Carbamate-Phase)

ReproSil Chiral-CM, 5 µm, Alternative to Daicel OC-H (PN:r65.cm)
(Tris (Phenylcarbamate)-Cellulose mod. Silica)

Reprosil Chiral-JM (Cellulose-Methylbenzoyl-Phases , for RP and NP)

ReproSil Chiral-JM, 3 µm, Alternative to Daicel OJ-3 (PN:r63.jm)
(or ReproSil Chiral-JM-R) (Tris (4-Methylbenzoyl)-Cellulose mod. Silica)

ReproSil Chiral-JM, 5 µm, Alternative to Daicel OJ-H (PN:r65.jm)
(or ReproSil Chiral-JM-R) (Tris (4-Methylbenzoyl)-Cellulose mod. Silica)

ReproSil Chiral-JM, 10 µm, Alternative to Daicel OJ (PN:r60.jm)
(or ReproSil Chiral-JM-R) (Tris (4-Methylbenzoyl) -Cellulose mod. Silica)

Reprosil Chiral-ZM (Cellulose-Phases , for RP and NP)

ReproSil Chiral-ZM, 5 µm, Alternative to Daicel OZ-H (PN:r65.zm)
(or ReproSil Chiral-ZM-R) (Cellulose tris-3-Chloro-4-Methylphenylcarbamate mod. Silica)

ReproSil Chiral-ZM, 3 µm, Alternative to Daicel OZ-3 (PN:r63.zm)
(or ReproSil Chiral-ZM-R) (Cellulose tris-3-Chloro-4-Methylphenylcarbamate mod. Silica)

Reprosil Chiral-ZA (Amylose-Phases , for RP und NP)

ReproSil Chiral-ZA, 5 µm, (Alternative Epitomize 1K) (PN:r65.za)
(or ReproSil Chiral-ZA-R) (Amylose tris-3-Chloro-4-Methylphenylcarbamate mod. Silica)

ReproSil Chiral-ZA, 3 µm, (PN:r63.za)
(or ReproSil Chiral-ZA-R) (Amylose tris-3-Chloro-4-Methylphenylcarbamate mod. Silica)

Reprosil Chiral-YM (Amylose-Phases , for RP und NP)

ReproSil Chiral-YM, 5 µm,
(or ReproSil Chiral-YM-R) Alternative to Daicel AY-H (PN:r65.ym)
(Amylose tris-5-Chloro-2-Methylphenylcarbamate mod. Silica)

ReproSil Chiral-YM, 3 µm,
(or ReproSil Chiral-YM-R) Alternative to Daicel AY-3 (PN:r63.ym)
(Amylose tris-5-Chloro-2-Methylphenylcarbamate mod. Silica)

Reprosil Chiral-BM (Cellulose-Benzoyl-Phases , for RP and NP)

ReproSil Chiral-BM, 5 µm,
(or ReproSil Chiral-BM-R) Alternative to Daicel OB-H (PN:r65.bm)
(Tris- (Benzoyl)-Cellulose mod. Silica)

ReproSil Chiral-BM, 10 µm,
(or ReproSil Chiral-BM-R) Alternative to Daicel OB (PN:r60.bm)
(Tris (Benzoyl)-Cellulose mod. Silica)

Reprosil -AGP (300 Å° Silicagel with chiral AGP –Protein , USP-L41)

ReproSil -AGP, 5 µm,
100 x 4 mm (PN: r35.agp.s1004)
100 x 3 mm (PN: r35.agp.s1003)
150 x 3 mm (PN: r35.agp.s1503)
50 x 3 mm (PN: r35.agp.s0503)
Guards: 5 x 3 mm; 2 pieces (PN:r35.agp.v0003)
Guard holder ,direct (PN:81.00)

100 x 2 mm (PN:r35.agp.s1002)
150 x 2 mm (PN:r35.agp.s1502)
50 x 2 mm (PN:r35.agp.s0502)

Guards: 5 x 2 mm; 2 pieces (PN:r35.agp.v0002)
Guard holder ,direct (PN:91.00)

Reprosil-HSA (300 Å° Silicagel with chiral HSA-Protein)

ReproSil HSA, 5 µm,
100 x 2 mm (PN:r35.hsa.s1002)
150 x 2 mm (PN:r35.hsa.s1502)
50 x 2 mm (PN:r35.hsa.s0502)

Guards: 5 x 2 mm; 2 pieces (PN:r35.hsa.v0002)
Guard holder ,direct (PN:91.00)

Other Chiral Phases

Nucleosil Chiral-2, 5 µm, 250 x 4 mm (n15.dpg.s2504), 250 x 4 mm

ReproSil Chiral-PS, 8 µm,	Chiral separations in NP and RP-Modus (PN:r18.ps) (for aromatic compounds with S or P, for example: Sulfoxides, Phosphine Oxides, Phosphonates, Thiophosphin Oxides, Phosphin Selenides, Phosphine Boranes)	250 x 4.0 mm
ReproSil Chiral-OH, 8 µm,	Chiral separations in NP-Modus (PN:r18.oh) (Aromatic Alcohols with OH near chiral centre, Aryl Carbinols)	250 x 4.0 mm
ReproSil Chiral-AA, 8 µm,	Chiral separations in NP and RP-Modus (PN:r18.aa) (for all Amino acids, L-Form eluts first)	250 x 4.0 mm
ReproSil Chiral-TAG, 8 µm	Chiral separations in NP and RP-Modus (PN:r18.tag) (Teicoplanin Aglycon: for Aminoalkohols, N-blocked Amino Acids, a-Hydroxy Acids, Oxazolidinons, Hydantoins, Imides, Aminoacids, USP-L63)	250 x 4.0 mm
Reprosil Chiral-TG, 5 µm	RP-Phase with Tergurid, for chiral Fmoc- and Dansyl-Aminoacid (r15.tg.s2504)	250 x 4.0 mm
ReproSil Chiral-CA, 5 µm	Chiral compounds in NP-Modus (PN:r15.ca) (Pirkle Phase, Specially for compounds with a <u>C</u> arboxylic-Group)	250 x 4.0 mm
ReproSil Chiral-CA, 8 µm	Chiral compounds in NP-Modus (PN:r18.ca) (Pirkle Phase, Specially for compounds with a <u>C</u> arboxylic-Group)	250 x 4.0 mm
Reprosil Chiral-Beta-CD, 5 µm	USP-L45 (Dansyl-Aminoacids, Barbiturates, Propranolol Sulfonamide, Prostaglandines (r15.bcd.s2504)	250 x 4 mm
Reprosil Chiral-Gamma-CD, 5 µm	(r15.gcd.s2504)	250 x 4 mm
Reprosil Chiral-D-PhenylGlycin, 5µm	USP-L36, N-(3,5-Dinitrobenzoyl)-D-Phenylglycin. „Brush-Type“ Phase. Altern. to Nucleosil Chiral-2, USP-L36, Typ. Eluent: Heptane / IPA / TFA (For Herbicides + Pharmaca (Alcohols, Carbon. acids, Esters, Sulfoxides) Like Fenoprop-Methyl, Mecoprop-Methyl, Supidimid) (PN: r15.DPG.s2504) 250x4 mm (250 x 10 mm, 250 x 20 mm)	
Reprosil Chiral-D-PhenylGlycin, 3µm	USP-L36, N-(3,5-Dinitrobenzoyl)-D-Phenylglycin. „Brush-Type“ Phase. Typ. Eluent: Heptane / IPA / TFA (Herbicides + Pharmaca (Alcohols, Carb. acids, Ester, Sulfoxides) Fenoprop-Methyl, Mecoprop-Methyl, Supidimid) (PN: r13.DPG.s2504) 150x4 mm	
Reprosil Chiral-L-PhenylGlycin, 5µm	USP-L36, N-(3,5-Dinitrobenzoyl)-L-Phenylglycin. „Brush-Type“ Phase. Typ. Eluent: Heptane / IPA / TFA, Altern. to Nucleosil Chiral-3, Antipode to D-PhenylGlycin (Herbicides + Pharmaca (Alcohols, Carbon. Acids, Ester, Sulfoxides) Fenoprop-Methyl, Mecoprop-Methyl, Supidimid) (PN: r15.LPG.s2504) 250x4 mm	
Reprosil Chiral-L-Leucin, 5µm	N-(3,5-Dinitrobenzoyl)-L-Leucin, „Brush-Type“ Phase. Typischer Eluent: Heptan / IPA / TFA (PN: r15.LL.s2546) 250x4.6 mm	
Reprosil Chiral-l-Prolin, 5 µm	Davankov-Ligand exchange, Aminoacids, Hydantoine, Succinimide, Gluthetimide, Barbiturate, Sulfoxide (r15.pr.s2504) 250x4 mm	
Reprosil L-Hydroxy-Prolin, 5 µm	Alternative to Nucleosil Chiral-1, USP-L32 Ligand exchange, Eluent: 2-10 mM Coppersulfate, 20-60°C (For DL-Atrolactinacid, DL-Mandelic acids, DL-lactic acid, DL-Asparagin; DL-Serin, DL-Phenylalanin, DL-Threonin, DL-Prolin, DL-Histidin, DL-Valin, DL-Tyrosin, DL-Tryptophan), (r15.hp.s2504) 250x4mm	

Chiral-Phases from other suppliers

Chirobiotic-TAG, 10 µm	Chiral separations in NP and RP-Modus (PN:ch0.tag) (Chiral Selector:Teicoplanin Aglycon)	250 x 4.6 mm
Nucleocel Delta-S, 5 µm (Macherey + Nagel)	(m5.del.s2546) 250 x 4.6 mm (m5.del.s1546) 150 x 4.6 mm	
Nucleocel Delta-RPS, 5 µm (Macherey + Nagel)	(m5.delr.s2546) 250 x 4.6 mm (m5.delr.s1546) 150 x 4.6 mm	
CelluCoat, 10 µm (Eka Nobel)	(k10.od.s2546) 250 x 4.6 mm	
CelluCoat, 25 µm (Eka Nobel)	(k25.od.s2546) 250 x 4.6 mm	
AmyCoat, 10 µm (Eka Nobel)	(k10.am.s2546) 250 x 4.6 mm	
AmyCoat, 25 µm (Eka Nobel)	(k25.am.s2546) 250 x 4.6 mm	

Chiral-columns from Regis Technologies:

Whelk0-01 10/100 (R,R)-Kromasil	PN:786 515	250 x 4.6 mm
Whelk0-01 10/100 (S,S)-Kromasil	PN:786 615	250 x 4.6 mm
Whelk0-01 16/100 (S,S)-Kromasil	PN:786 351	250 x 4.6 mm
Ulmo 10/100 (R,R)-Kromasil	PN:787 400	250 x 4.6 mm
Dach- DNB 10/100 (R,R)-Kromasil	PN:788 401	250 x 4.6 mm

Sumichiral OA (Covalently bonded chiral phases) 250 x 4.6 mm

Preparative Phases:

Chiralpak IA, 20 µm (Daicel)	(dai.ia.s2546)	250 x 4.6 mm
Chiralpak IC, 20 µm (Daicel)	(dai.ic.s2546)	250 x 4.6 mm
Chiralpak AD, 20 µm (Daicel)	(dai.ad.s2546)	250 x 4.6 mm
Chiraspher, 25 µm (Merck)	For Betablocker (m25.csp.s2546)	250 x 4.6 mm
Chiradex, 20 µm (Merck)	beta-Cyclodextrin -Phase (m20.cd.s2546)	250 x 4.6 mm

Guards: 10 x 4 mm, 5er Pack (Direct Guard-Holder 81.10)

ReproSil[®] Mixed-Mode Phases (Maisch)

Porous spherical silicas

Mixed mode phases:

C18 + Amino, C18 + Cyano, C18 + Phenyl, C18 + Acid groups.

With 2 different modifications on the same silica:

	% Carbon	endcapping	Mat.No.:	Price group
Reprosil Amino-C18, 5 µm	(C18- with NH ₂ -Groups)		r15.18a	7
Reprosil Cyano-C18, 5 µm	(C18-with CN-groups)		r15.c9	7
Reprosil Phenyl-C18, 5 µm	(C18-with Phenyl- groups)		r15.p9	7
Reprosil C18-Acid, 5 µm	(C18-with Acid- groups)		r15.9ac	7
Reprosil C18-Acid, 10 µm	(C18-with Acid- groups)		r15.9ac	6

Special phases: ReproSil® Chiral, OPA, Fmoc, PAH, Pestizid, Dabs, SEC, DIBS (Maisch)

Porous spherical silicas: 3 µm or 5 µm

Dimension: 250 x 4 mm	Applications	Mat. No.:
ReproSil PAH-EPA, 5 µm	16 PAHs (EPA)	pah5.
ReproSil PAH-V, 5 µm	16 PAHs (EPA, longer RT's)	v35.pah.
ReproSil Pestizid-3	Pesticides	pe3.
ReproSil Fmoc	Fmoc-Amino acids	fmoc.
ReproSil OPA,	OPA-Amino acids (150 x 4.6)	opa.
ReproSil DABS	DABS-Amino acids	dabs.
ReproSil FLEC	FLEC-Amino acids (Chiral)	flec.
ReproSil 100 CAT, 7 µm	(mono- + divalent Cations in 1 run, Silica-phase)	r17.cat.
(Repromer 100 CAT, 7 µm	(mono- + divalent Cations in 1 run, Polymer Phase)	RM17.cat.

Reprosil SEC (Maisch) Aqueous Size Exclusion Chromatogr.

SEC Phases on Silica-Basis

Optimal Injections: (300 x 8 mm): 20 – 100 µg sample in 1 – 20 µl.

ReproSil 50 SEC	SEC for Peptides MG-Area: 500 - 10 000 D	(Alternative to Synchropak GPC-Peptides)
	300 x 4.6 mm	PN: r05.sec.s3046
	300 x 8 mm	PN: r05.sec.s3008
	Guard: 23 x 8 mm	PN: r05.sec.s0308
ReproSil 125 SEC	SEC for Peptides MG-Bereich: 5000 - 100 000 D	(Alternative to G2000SW)
	300 x 4.6 mm	PN: r15.sec.s3046
	300 x 8 mm	PN: r15.sec.s3008
	Guard: 23 x 8 mm	PN: r15.sec.s0308
ReproSil 200 SEC	SEC for Proteins MG-Area: 10 000 – 500 000 D	(Alternative to G3000 SWXL)
	300 x 4.6 mm	PN: r25.sec.s3046
	300 x 8 mm	PN: r25.sec.s3008
	Guard: 23 x 8 mm	PN: r25.sec.s0308
ReproSil 200 SEC-2	SEC für Proteine MG-Bereich: 10 000 – 500 000 D	(Alternative zu G3000 SWXL)
	300 x 4.6 mm	PN: r25.sec2.s3046
	300 x 8 mm	PN: r25.sec2.s3008
	Vorsäule: 23 x 8 mm	PN: r25.sec2.s0308
ReproSil 300 SEC	SEC für Proteine MG-Bereich: 10 000 – 1 000 000 D	(Alternative zu G3000 SWXL)
	300 x 4.6 mm	PN: r35.sec.s3046
	300 x 8 mm	PN: r35.sec.s3008
	Vorsäule: 23 x 8 mm	PN: r35.sec.s0308
ReproSil 4000 SEC	SEC for Proteins MG-Area: 20 000 – 5 000 000 D	(Alternative to G4000 SWXL)
	300 x 4.6 mm	PNr45.sec.s3046
	300 x 8 mm	PN: r45.sec.s3008
	Guard: 23 x 8 mm	PN: r45.sec.s0308

SEC Phasen on Methacrylat-Polymer Basis (USP-L37 / USP-L38).

Alternatives to: HEMA-Bio (Tessek), OHpack (Shodex), PL-Aquagel-OH (Agilent), Polysep P3000/4000/5000 (Phenomenex), Suprema (PSS), TSK-G2500/3000/4000/5000 PW, Ultrahydrogel (Waters).

(Max. Flow: 1 ml/min, pH-range: 2-10, Eluent: Water with salts / Buffers, MeOH, ACN (Temperature: 10 - 80 C°, Storage under 0.05 % NaN₃, Avoid drying)

For SEC of neutral and anionic Polymers (PEO, PEG, Pullulan, Polyarylamid, Hyaluronic acid, Polyacrylic acid, Dextransulfats, Heparin, Pektin, Polyvinylalcohol, etc.)

Prices for 10µm:

300 x 8 mm: 1040,- Euro

250 x 8 mm: 940,- Euro

30 x 8 mm: 250,- Euro

Repromer OH-2500	< 20 000 D	300 x 8 mm 250 x 8 mm 30 x 8 mm	PN: RM0.OH25.s3008 PN: RM0.OH25.s2508 PN: RM0.OH25.s0308
Repromer OH-3000	< 80 000 D	300 x 8 mm 250 x 8 mm 30 x 8 mm	PN: RM0.OH3.s3008 PN: RM0.OH3.s2508 PN: RM0.OH3.s0308
Repromer OH-4000	1 - 300 KD	300 x 8 mm 250 x 8 mm 30 x 8 mm	PN: RM0.OH4.s3008 PN: RM0.OH4.s2508 PN: RM0.OH4.s0308
Repromer OH-5000	2.5 - 1 000 kD	300 x 8 mm 250 x 8 mm 30 x 8 mm	PN: RM0.OH5.s3008 PN: RM0.OH5.s2508 PN: RM0.OH5.s0308

ReproGel GPC (Maisch)

for (non aqueous) GPC

Typical-Dimensions: 300 x 8 mm (or 600 x 8 mm) iD.
Columns come under THF

Prices for

5 µm: (300 x 8 mm) Guard column: 20 x 8 mm: 250,-Euro

10µm: (300 x 8 mm)

5 µm: (250 x 20 mm)

10 µm: (250 x 20 mm)

(Refill: minus 50,-Euro)

For (non aqueous) GPC:	Daltons	
Repro-Gel GPC, 5 µm, 50 A°	< 1 000	rg5.050.
Repro-Gel GPC, 5 µm, 100 A°	> 3000	rg5.100.
Repro-Gel GPC, 5 µm, 500 A°	> 20 000	rg5.500.
Repro-Gel GPC, 5 µm, 1000 A°	1 000 - 40 000	rg5.103.
Repro-Gel GPC, 5 µm, 10 000 A°	4 000 - 500 000	rg5.104.
Repro-Gel GPC, 5 µm, 100 000 A°	10 000 - 2 000 000	rg5.105.
Repro-Gel GPC, 5 µm, 1 000 000 A°	200 000 - 10 000 000	rg5.106.
Repro-Gel GPC, 5 µm, linear	1 000 - 1 000 000	rg5.lin.

GPC phases in 3 µm possible!

1.) Spherical Polymer Phases with Polystyrene-divinylbenzene (PSDVB) Matrix:

For sugars, Alcohols and org. Acids: (Polymers eluate in front of monomers!)

(Alternatives to: HC-75 (Waters), PL-HiPlex (Polymer Labs), Rezex (Phenomenex), Aminex 87 (Bio-Rad), Chrompack Org.Acrid /Carbohydrates (Varian), Nucleogel-Sugar (MN), Supelcogel (Supelco), Carbosep (Shodex), Polyspher (Merck), Metacarb (Metachem).

Typical column-dimensions: 250 x 8 mm oder 300 mm x 8 mm iD. On request also with 7.8 mm iD possible. Price group 6: Price Example: 300 x 4.6 mm

	Eluent:	Mat.No:	250 x 8 mm	300 x 8 mm	300 x 4.6 mm
Repro-Gel H, 9 µm	9 mM Sulfuric acid	su9.h0			
Repro-Gel Ca, 9 µm	Water at 80 C°	su9.ca.			
Repro-Gel Na, 9 µm	Water at 80 C°	su9.na.			
Repro-Gel K, 9 µm	Water at 80 C°	su9.k0.			
Repro-Gel Pb, 9 µm	Water at 80 C°	su9. pb.			

Short columns: 150 x 8 mm; Guards: 20 x 8 mm; **Refill: minus**

-Analytical Dimensions in Price group 6:

For example: 250 x 4 mm (Refill minus)

Guards: 5er Pack: 10 x 4 mm, Guard holder PN: 81.10

-Deashing Tandem Set:

Kit complete with 5 cation-exchange guards and 5 anion-exchange guards + guard holder :

Set: 5 Guards Reprigel H+, 12 µm, 20 x 4.6 mm + 5 Guards Reprigel AX, 15 µm, 20 x 4.6 mm + Guard-Holder

2.) Repromer RCX-30: (Alternative to Metrosep Carb-1 and CarboPak PA1)

Anion-exchange column based on Polystyrene / Divinylbenzene polymer.

For separation of mono-, di- and oligosaccharides, as well as sugar alcohols.

Typical eluents are: NaOH and Na-Acetate.

Repromer RCX-30, 7 µm, 250 x 4 mm: PN: rm37.rcx.s2504

3.) Special Amino-Phase on Silicagel-Base for Sugars: (Monomers eluate in front of Polymers!)

Reprisil Carbohydrate, 5 µm (AminoSilica, 80 A° Poren, 4 % C)

250 x 4.6 mm (oder 4 or 3 mm iD)

PN.: r15.ch.s25xx

(Typical Eluent: ACN / Wasser (70/30), Detection: RI)

-Polymer Phases with Polystyrene-Divinylbenzene matrix (PSDVB).

-pH stable from 1 - 14

-For Biocompounds (Peptides und Proteins) and other small basic compounds

-RP-Phases + Ion-exchangers

RP-Phases: (Alternatives to PLRP-S from Polymer Lab and Hamilton phases.)

Repromer 100 RPS, 5 µm	100 A° Pores	RM15.rps	Price group: 6
Repromer 100 RPS, 8 µm	100 A° Pores	RM18.rps	Price group: 6
Repromer 100 RPS, 10 µm	100 A° Pores	RM10.rps	Price group: 6
Repromer 100 RPS, 15 µm	100 A° Pores	RM15.rps	Price group: 6
Repromer 300 RPS, 5 µm	300 A° Pores	RM35.rps	Preisgruppe: 6

Repromer 300 RPS, 8 µm	300 Å Pores	RM38.rps	Price group: 6
Repromer 300 RPS, 10 µm	300 Å Pores	RM30.rps	Price group: 6

Repromer 1000 RPS, 8 µm	1000 Å Pores	RM68.rps	Price group: 6
Repromer 1000 RPS, 10 µm	1000 Å Pores	RM60.rps	Price group: 6

100 Å Pores, ion exchanger for small compounds:

Repromer AXS, 7 µm (Anion-Exchange, with Suppressor)		RM17.axs	Price group: 7
Repromer AX, 5 µm (Anion-Exchange, 100Å°)		RM15.ax	Price group: 7
Repromer AX, 10 µm (Anion-Exchange, 100Å°)		RM10.ax	Price group: 6
Repromer SCX, 10 µm (Cation-Exchange, 100Å°)		RM10.scx	Price group: 6

Repromer CAT, 7 µm (mono- + dival. Cations in 1 run, Eluent: 2 mM Cupric sulfate) RM17.cat. Price group : 7

1000 Å Pores, ion exchanger for peptides + proteins: (Alternative to Vydac 300 VHP)

Repromer 1000 AX, 10 µm (Anion-Exchange, 1000Å°)		RM60.ax	Price group: 6
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For Sugars / Sugaralcohols at high pH (Alternative to Metrosep Carb-1 and CarboPak PA1)

Repromer 30 RCX, 7 µm (300 Å Pores, for complex mixtures)		RM37.rcx	Price group: 7
Repromer 10 RCX, 7 µm (100 Å Pores, sugars up to DP7)		RM17.rcx	Price group: 7

Other polymeric phases on request.

Phases from othe suppliers

Fluofix II[®] (Wako)

2013: Standard Fluofix is no more available! Replaced by Fluofix II 120E.

Particle size: 5 µm	Pore diameter: 120 Å°
Surface area: 300 m ² /g	Modification: with Tridecafluoro-Dimethyl-Heptyl-Silane

Original Fluofix columns:

Fluofix-II 120E, 5 µm, 250 x 4.6 mm:	Art.Nr.: 236-63383
Fluofix-II 120E, 5 µm, 150 x 4.6 mm:	Art.Nr.: 239-63373

Fluofix columns packed by Dr. Maisch

Guards: 5 x 4 mm (5 pieces)

Guard holder Stand-alone: PN: 82.00

Fluofix-II 120E, 5 µm, 250 x 4.6 mm:	Art.Nr.: 1EW2.s2546
Fluofix-II 120E, 5 µm, 150 x 4.6 mm:	Art.Nr.: 1EW2.s2546
Fluofix-II 120E, 5 µm, 250 x 3 mm:	Art.Nr.: 1EW2.s2503
Fluofix-II 120E, 5 µm, 150 x 3 mm:	Art.Nr.: 1EW2.s1503
Fluofix-II 120E, 5 µm, 250 x 2 mm:	Art.Nr.: 1EW2.s2502
Fluofix-II 120E, 5 µm, 150 x 2 mm:	Art.Nr.: 1EW2.s1502
Fluofix-II 120E, 5 µm, 100 x 2 mm:	Art.Nr.: 1EW2.s1002

Other dimensions on request.

Reprosil-Pur Basic-C18

ReproSil-Pur Basic-C18 is a new phase with an outstanding performance and stability:

Typical features are:

1.) Octadecyl monolayer phase bonded to spherical silica particles
 -with pore size of 100 Å,
 -a surface area of 450 m²/g and
 -a pore volume of 1.1 ml/g.

2.) Impurities:

AL < 1 ppm,

Fe < 1 ppm,

Ti < 1 ppm,

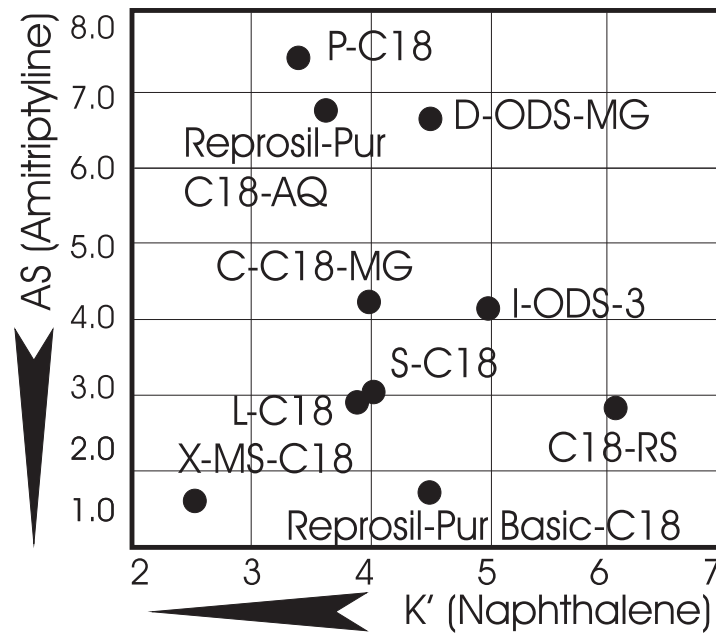
Zr < 1 ppm

3.) *Double bound endcapping*

4.) pH -stability from 1.5 to 10,
 because of the unique stable endcapping

5.) Perfect peak symmetry even with strong bases

Comparison of different C18 Phases



Eluents:

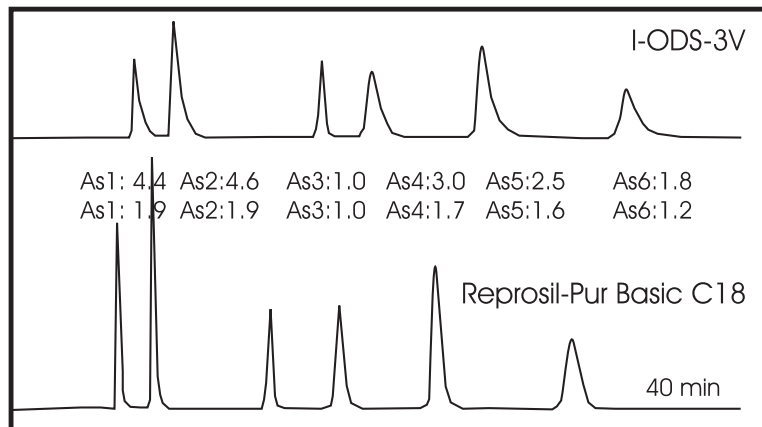
Naphthalene: MeOH / H₂O (70 / 30)

Amitriptyline: MeOH / 20 mM K₂HPO₄ pH7 (65 /35)

Comparison of I-ODS-3V und Reprosil-Pur Basic-C18

Sample of basic compounds:

- 1.) Desipramine
- 2.) Nortriptyline
- 3.) Acenaphthene (I.S.)
- 4.) Imipramine
- 5.) Amitriptyline
- 6.) Trimipramine



Column Size: 150 x 4.6 mm

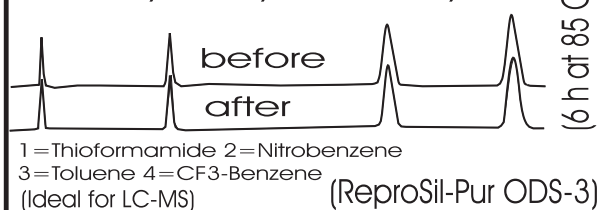
Eluent: MeOH / 20 mM K₂HPO₄ / KH₂PO₄, Buffer-pH7 (70/30)

Flow rate: 1.2 ml / min.

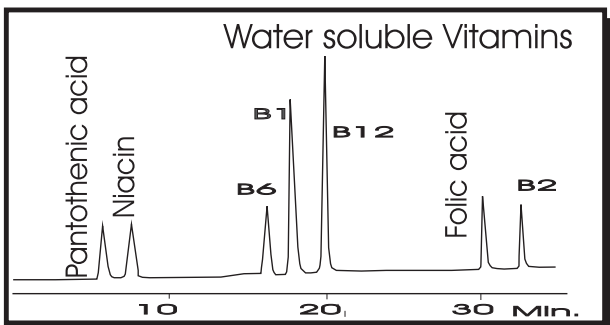
ReproSil-Pur ODS-3

Stability test

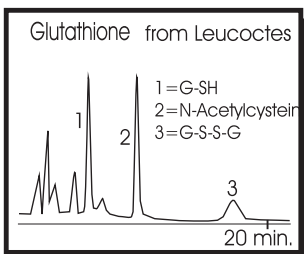
Courtesy of Bayer AG, Dr.Eymann^o (6 h at 85°C pH2)



Stability test of Bayer-AG.
Good columns tolerate this drastic treatment.

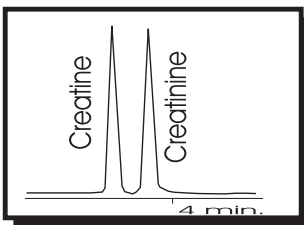


Column: ReproSil-Pur ODS-3, 5 μ m (250 x 4.6mm)
Eluent: A: 20 mM KH₂PO₄ pH-6,6
B: 20 mM KH₂PO₄ pH-6,6 / ACN (80/20)
Gradient: 0-5 min.: 0 %B; 5 - 25 min.: 0 - 75 %B;
25-30 min. 75-100 % B; 30-35 min.: 100 %B;
Flow rate: 1 ml/min., Detection: 254 nm



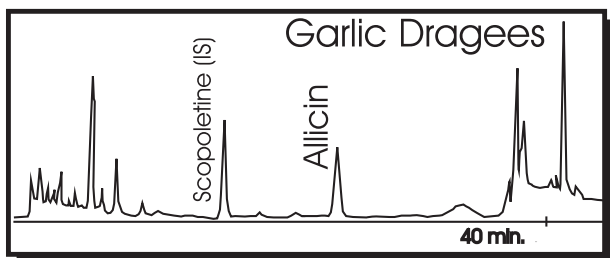
Glutathione

ReproSil-Pur ODS-3,
5 μ m, (250 x 4.6mm)
Eluent:
10mM Na₂PO₄ pH=2,7
+ 50 μ M Na-Octylsulfate,
2% ACN, Flow rate: 1 ml/min.



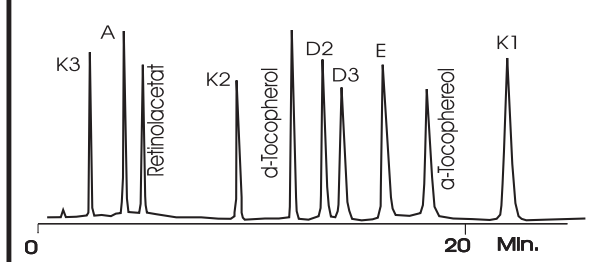
Creatine/Creatinine

ReproSil-Pur ODS-3,
5 μ m (150 x 4 mm)
Eluent: 1 mM Tert-Butyl-NH₄Cl
in H₂O Flow rate: 0,8 ml/min.
Detection: 235 nm

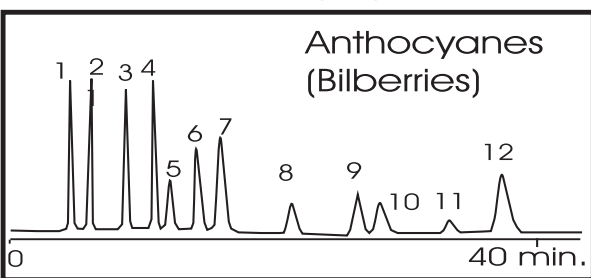


ReproSil-Pur ODS-3, 5 μ m, (250 x 4 mm)
Gradient: A=H₂O pH2 (H₃PO₄) / MeOH (70/30), B=MeOH,
Flow rate: 0,8 ml/min, Detection: 254 nm

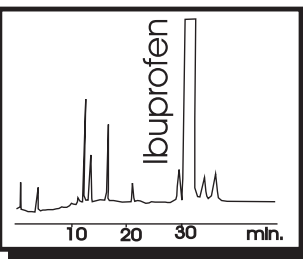
Fat soluble Vitamins



ReproSil-Pur ODS-3, 5 μ m (150 x 4.6 mm)
Eluent: 100% ACN
Flow rate: 1 ml/min. Detection: 280 nm
Sample: Fa. Dr. Ehrenstorfer, Augsburg, Germany



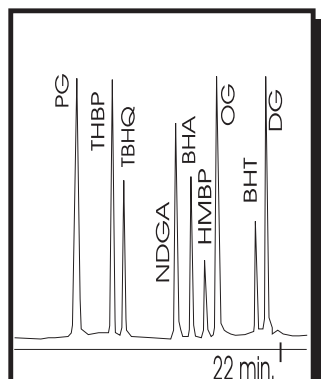
Column: ReproSil-Pur ODS-3, 5 μ m (250x4.6mm)
Eluent: H₂O/CH₃CN/HCOOH (81:9:10)
Detection: 546 nm, Flow rate: 1 ml/min., Sample:
1 = Delphinidin-3-galactoside, 2 = Delphinidin-3-glucoside,
3 = Delphinidin-3-rutinoside, 4 = Cyanidin-3-glucoside,
5 = Cyanidin-3-galactoside, 6 = Cyanidin-3-arabinoside,
7 = Petunidin-3-glucoside, 8 = Peonidin-3-galactoside,
9 = Peonidin-3-glucoside, 10 = Malvidin-3-galactoside,
11 = Peonidin-3-arabinoside, 12 = Malvidin-3-glucoside



Ibuprofen

Purity control

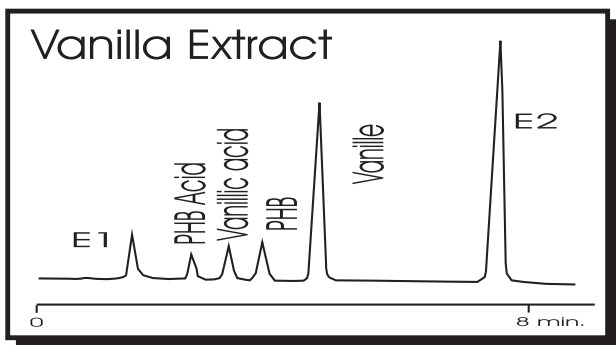
ReproSil-Pur 120 ODS-3, 5 μ m
(150 x 2 mm)
Eluent: A=H₂O B=ACN
Gradient: in 10 min. linear
from 15% to 34% B,
then isocratic up to 45 min.
Flow rate: 0,6 ml/min. Detection:
254 nm



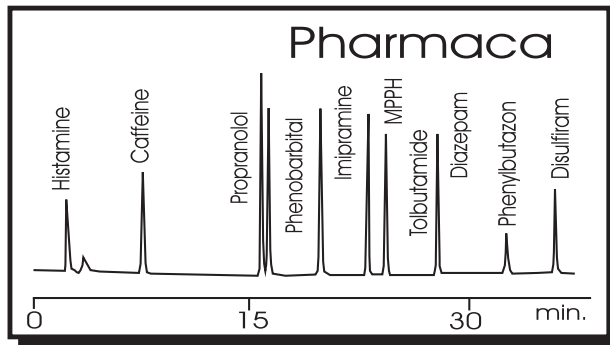
Antioxidants (from butter)

ReproSil-Pur ODS-3, 5 μ m
(250 x 3 mm)
Eluent: A=Acetic Acid 5%
B=MeOH/ACN (1:1).
Gradient: from 40% B to
90% B in 10 min., then isocratic
for
12 min. Flow rate: 0,5 ml/min.,
Detection: 280 nm, Injection: 10 μ l,
Temperature: RT

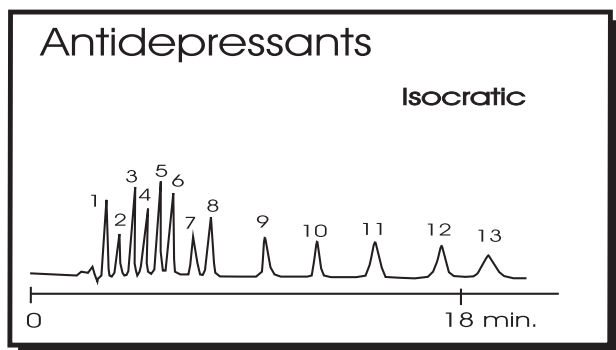
ReproSil-Pur ODS-3



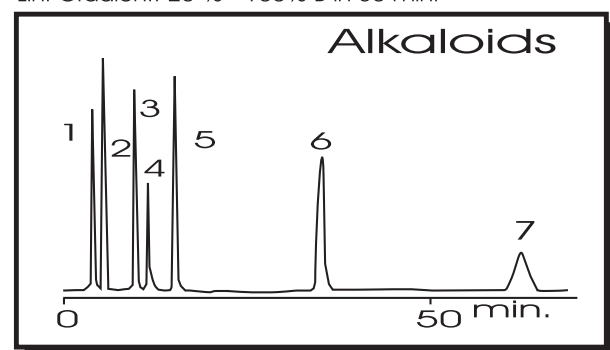
Column: ReproSil-Pur ODS-3, 3 μ m
53 x 3 mm, Flow rate: 0,5 ml/min.
Detection: 254 nm, Injection: 3 μ l
Gradient: A=ACN, B= Water
in 15 min.: from 10% A to 30% B



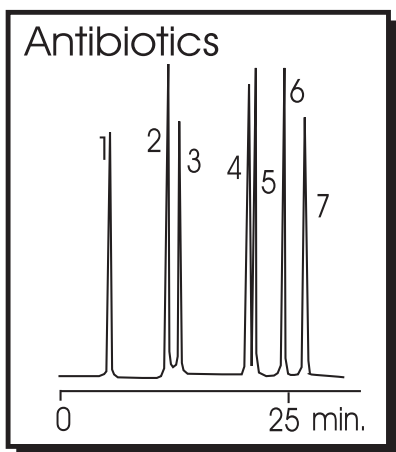
Column:
ReproSil-Pur ODS-3, 5 μ m (250 x 4.6mm)
Eluent:
A: 2.5 l water+25 ml TEAP (Fluka) pH=3.2
B: ACN / A (70/30, V/V)
Flow rate: 1 ml/min. Temperature: 40 C°
Lin. Gradient: 20 % - 100% B in 30 min.



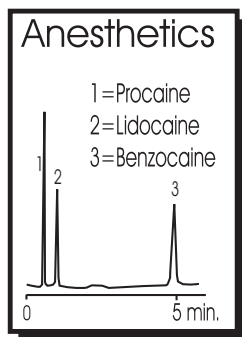
Column:
ReproSil-Pur ODS-3, 5 μ m (250 x 4.6 mm)
Flow rate: 1 ml/min. Temperature: 45 C°
Sample:
1 = Desmethylvenlafaxine 2 = Desmethylmirtazepine
3 = Milnacipram 4 = Venlafaxine 5 = Mirtazapine 6 = IS
7 = Desmethylcitalopram 8 = Citalopram 9 = Paroxetine
10 = Fluvoxamine 11 = Norfluoxetine 12 = Fluoxetine
13 = Sertraline



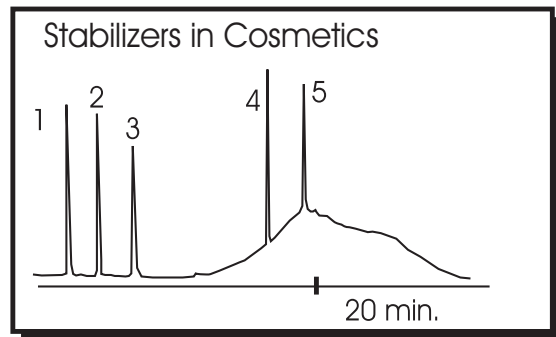
Column: ReproSil-Pur ODS-3, 5 μ m
(125 x 4 mm), Flow rate: 0,5 ml/min.
Eluent:
A: 20 mM K-Hydrogensulfate / ACN (82/18)
B: 20 mM K-Dihydrogensulfate / ACN (60/40)
Gradient: 0-100% in 30 mins., then at 100%
Sample: 1 = Scopolamine 2 = Atropine Sulfate
3 = Quinine 4 = Sparteine Sulfate 5 = Cinchonine
6 = Papaverine 7 = Narcotine



ReproSil-Pur ODS-3, 3 μ m (125 x 4 mm)
Eluent A: 50 mM Ammoniumphosphat /
ACN (9/1) B: 50 mM Ammoniumphosphate /
ACN (1/1) Gradient: in 25 min. to 55 % B,
then isocratic
Sample: 1 = Ampicillin, 2 = Oxytetracycline
3 = Tetracycline, 4 = Chloramphenicol,
5 = Oxolinic Acid, 6 = Doxorubicine,
7 = Nalidixic Acid



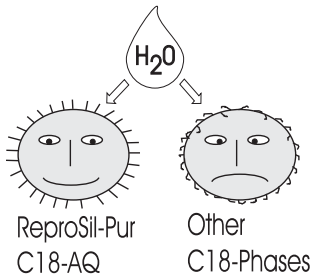
ReproSil-Pur ODS-3,
3 μ m, (53 x 4 mm),
Eluent:
Triethylammonium-
acetate (=,05%,
pH=4) / ACN (80/20)
Flow rate: 1 ml/min.



ReproSil-Pur ODS-3, 5 μ m (150 x 4.6 mm)
Eluent: Gradient A: Water B: MeOH
8 min.: at 50 % MeOH, then in 8 min.
onto 90% MeOH and 6 min. at 90% MeOH
Flow: 0,8 ml/min. Detection: 217 nm
Sample:
1.) Hydrochinon 2.) Hydrochinonmethylether
3.) Ethoxyphenat 4.) 4-Benzyloxyphenol
5.) Phenothiazinum

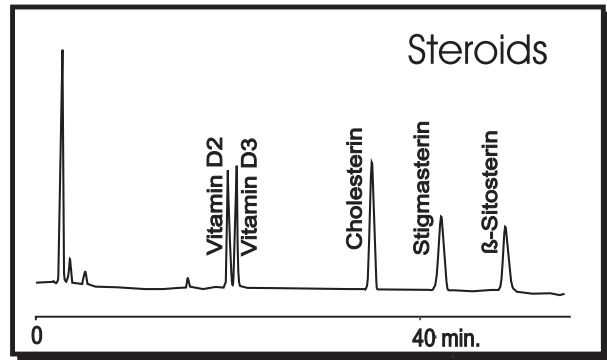
ReproSil-Pur C18-AQ

Stable RT with AQ



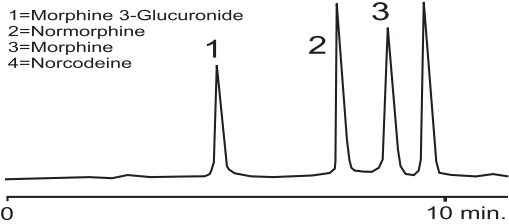
Stable RTs
due to
special
endcapping!

Stable RTs with just
pure water as eluent!

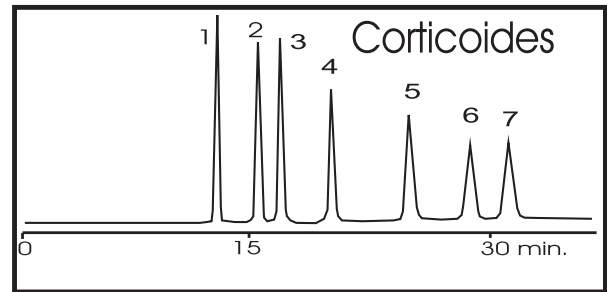


ReproSil-Pur C18-AQ, 5 μ m (250x4 mm)
Eluent: MeOH/H₂O (99/1) / ACN (90/10)
Flow rate: 1.5 ml/min. Detection: 214 nm

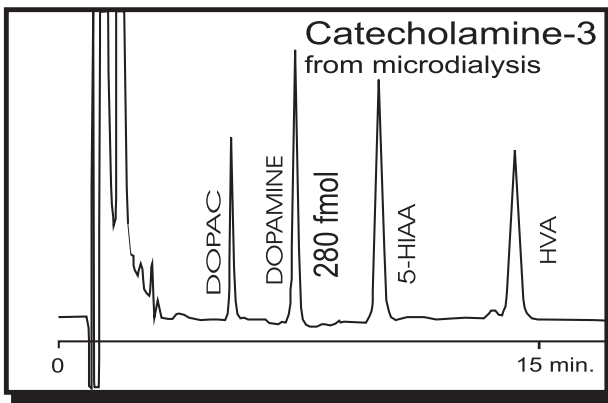
Morphine + Derivates



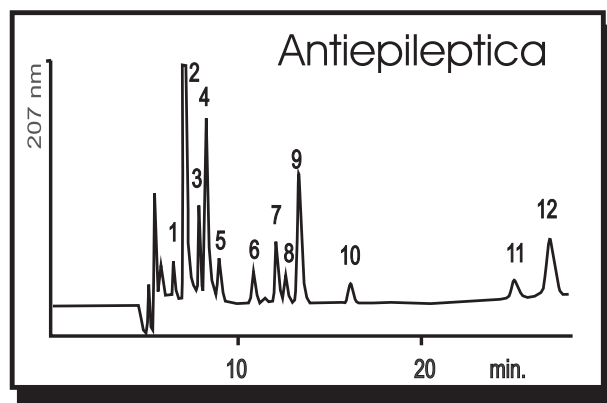
Column: ReproSil-Pur C18-AQ, 5 μ m (250x3mm)
Eluent: 20 mM KH₂PO₄ (pH3) / ACN (95/5)
Det.: Fluorimetr., Flow rate: 0,4 ml/min



Column: ReproSil-Pur C18-AQ, 5 μ m (250 x 4,6 mm)
Eluent: Tetrahydrofuran / MeOH / Water (25:3:72)
Det.: 247 nm, Temp.: 20 C°, Flow rate: 1 ml/min.
Sample: 1=Prednison, 2=Prednisolon, 3=Cortisol, 4=Flucortison
5=Methylprednisolon, 6=Triamcicolon (Volon), 7=Dexamethason



Column: ReproSil-Pur C18-AQ, 5 μ m (150x4 mm)
Eluent: 1000 ml Water: Na-Acetate-Trihydrate 7.465gr,
Na₂-EDTA 3.7 mg + Octanesulfonic acid sodium salt
monohydrate 108,3 mg+ 110 ml MeOH, pH=4.1 with
100% Acetic acid. Flow rate: 1 ml/min.
Detection: electrochemical

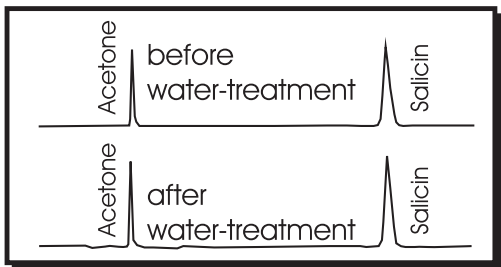


With integrated sample injection:
Guard: ReproSil DIBS, 12 μ m (13x4 mm)
Column: ReproSil-Pur C18-AQ, 5 μ m (250x3 mm)
Probe: 40 μ m, Pump A: 0,2 M K₂PO₄ + 1%MeOH
Pump B: 50 mM KH₂PO₄ / MeOH/ACN
(300/125/75)
Sample (serum): with added metabolites:
1=PEMA (5,2 ng/ml), 2=Ethosuximide (153,8 ng/ml),
3=Primidone (6,4 ng/ml), 4=Lamotrigine (10,4ng/ml),
5=Carbamazepindiol (1,6 ng/ml), 6=10-OH-Carba-
mazepine, 7=Phenobarbital (6,8 ng/ml), 8=Desmethyl-
mesuximide (2,6 ng/ml), 9=Carbamazepinopoxide
(9,8 ng/ml), 10=Oxycarbamazepine, 11=Phenytoine
(3,9 ng/ml), 12=Carbamazepine (10,2 ng/ml)

ReproSil-Pur C18-AQ

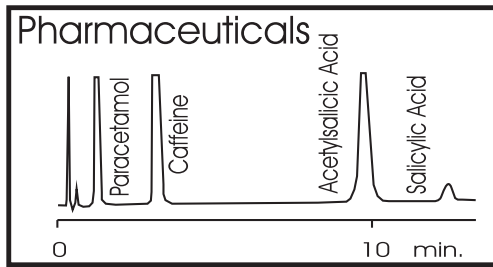
Proof for the Stability of C18-Phase:

Treatment with water



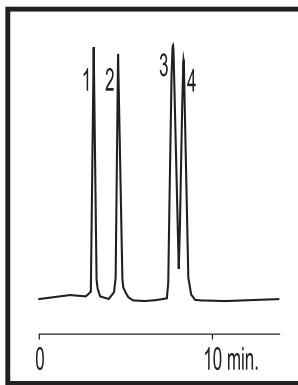
Test Eluent: MeOH/H₂O (10/90)
 Equilibration time: 20 min.; Treatment with pure H₂O, to be left over night.
 Stable RTs even with high water content.

Stable RTs for more than 1000 Injections

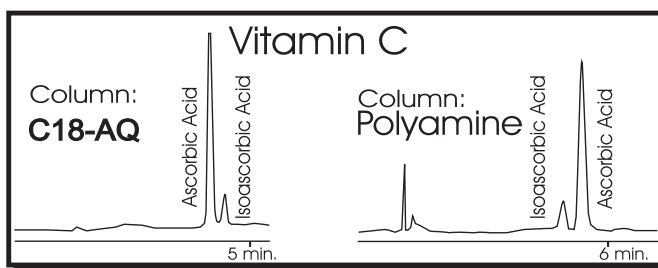


Courtesy of Dr. Rentschler GmbH

Column: ReproSil-Pur C18-AQ, 5 μ m (125 x 4mm)
 Eluent: ACN / MeOH / Acetic acid / Water (40/80/51/900)
 Flow rate: 1.5 ml/min. Detection: 275 nm Temperature: 30 C°
 Injection: 10 μ l



Native Amino Acids
 Column: ReproSil-Pur C18-AQ, 5 μ m (150 x 4.6 mm)
 Eluent: H₂O
 Temperature: 40 C°
 Flow rate: 0,6 ml/min.
 Detection: RI
 1=Alanine
 2=Valine
 3=Isoleucine
 4=Leucine

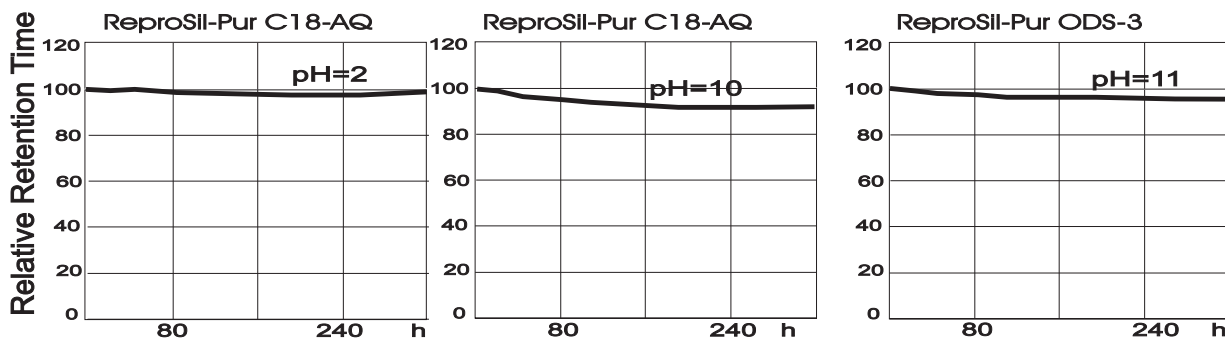


ReproSil-Pur C18-AQ, 5 μ m, (250x4 mm)
 Eluent: 0,25 %ige Phosphoric acid, Flow: 1ml/min.,
 Tem.:30C°, Injection: 20 μ l, Det.: 214 nm
 Stability Polyamine, 5 μ m (250 x 4 mm)
 Eluent: 50 mM Ammoniumdihydrogenphosphate / ACN (35/65)
 Flow rate: 1,5 ml/min. Temp.:30C°, Injection: 20 μ l, Det.: 214 nm

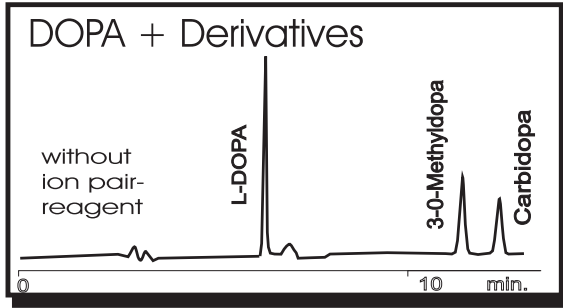
pH-Stability : 1 to 10

Modified silicas are most stable between pH 2 - 7.

The rule is: The longer the carbon-chain, the more stable the phases.

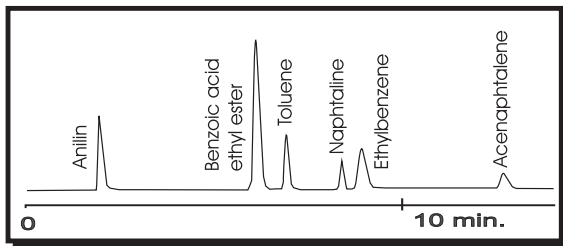
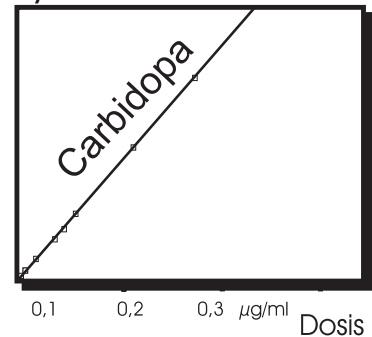
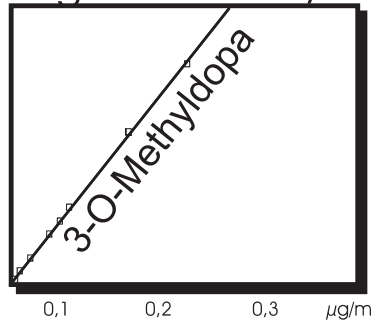
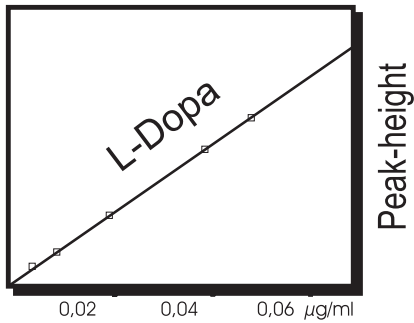


ReproSil-Pur C18-AQ

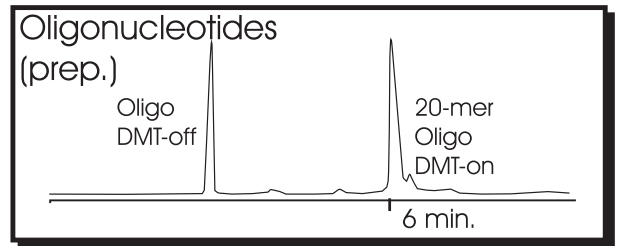


Column:
ReproSil-Pur C18-AQ, 3 μ m
(150x4 mm)
Eluent: 50 mM NaH₂PO₄
(pH 2.4) / MeOH (90/10)
Flow rate: 0,7 ml/min.
Detection: Electrochemical.

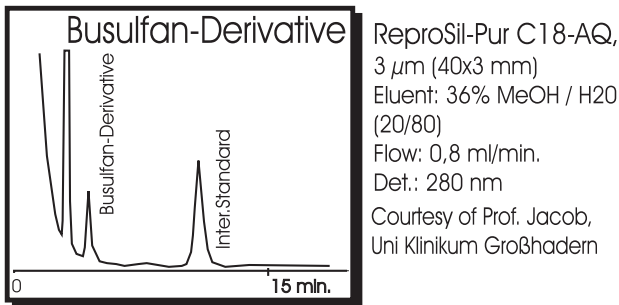
Relation: Dosis-Peak-Height: Linearity of Analysis:



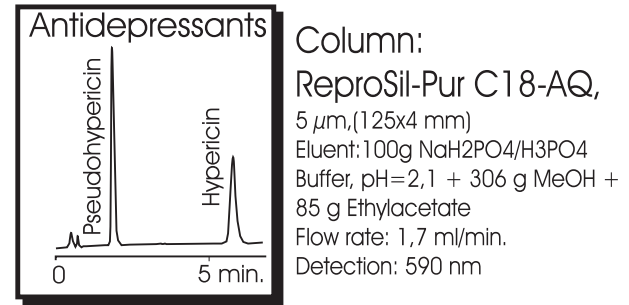
Column: ReproSil-Pur C18-AQ, 5 μ m
(250x4 mm) Eluent: ACN / 1% Phosphoric acid (65/35)
Flow rate: 1 ml/min., Detection: 254 nm



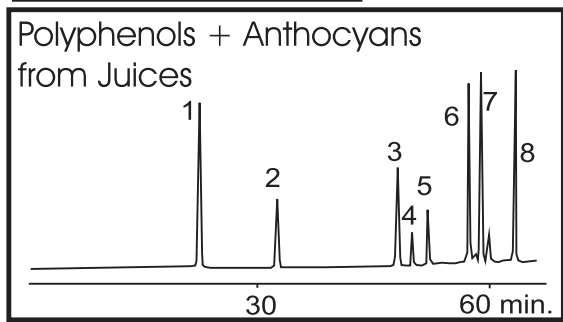
Column: ReproSil-Pur C18-AQ, 5 μ m
(100 x 8 mm) + Guard (30x8mm)
Eluent: 0,1 M TEAA / ACN Gradient: Start: 15/85 in 13 min. to 30/70



ReproSil-Pur C18-AQ,
3 μ m (40x3 mm)
Eluent: 36% MeOH / H₂O
(20/80)
Flow: 0,8 ml/min.
Det.: 280 nm
Courtesy of Prof. Jacob,
Uni Klinikum Großhadern

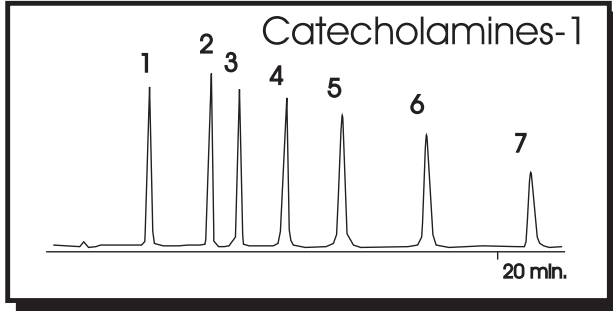


Column:
ReproSil-Pur C18-AQ,
5 μ m, (125x4 mm)
Eluent: 100g NaH₂PO₄/H₃PO₄
Buffer, pH=2,1 + 306 g MeOH +
85 g Ethylacetate
Flow rate: 1,7 ml/min.
Detection: 590 nm



Column: ReproSil-Pur C18-AQ, 10 μ m (250x4,6mm)
Eluent: A: H₂O/85% o-Phosphoric acid (99,5/0,5)
B: ACN / H₂O / 85% o-Phosphoric acid (50/49,5/0,5)
Gradient: 0-5 min. 0% B; 5-45 min.- 0-25%B; 45-65 min.
25-80%B; 65-70 min. 80-100 %B
Flow rate :1 ml/min. Temp.: 25 C°, Det.: 280 nm and 525nm,
Sample: 1=Gallic Acid, 2=Protocatechinic Acid
3=Chlorogenic Acid, 4=Delphinidin-3-rutinoside
5=Cyanidin-3-rutinoside, 6=p-Cumaric Acid
7=Ferulic Acid, 8=Phloridzin

ReproSil-Pur C18-AQ



Column: ReproSil-Pur C18-AQ, 5 μ m (150 x 4 mm)

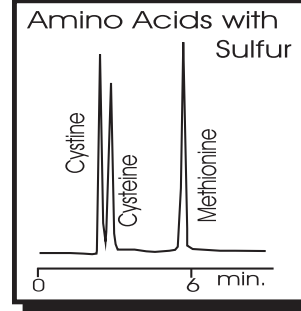
Sample:

1=Noradrenaline, 2=3,4-Dihydroxyphenyl acetic Acid,
3=3,4-Dihydroxyphenylalanine, 4=Dopamine, 5=Epinin,
6=Homovanillic acid, 7=3-O-Methylidopa

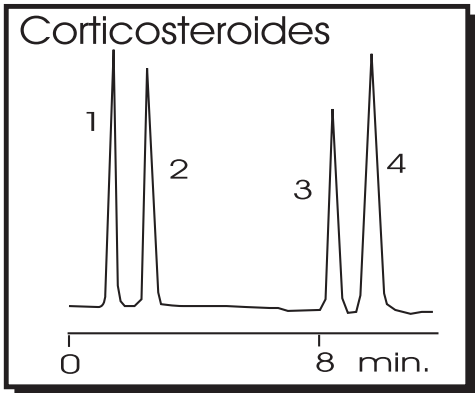
Eluent:

6,9g NaH₂PO₄ + 37 mg EDTA + 150 mg Na-Octansulfonate
+ 60 ml ACN + 5 ml THF auf 1000 ml H₂O

Temperature: Ambient, Detection: Electrochemical



Column:
ReproSil-Pur C18-AQ,
5 μ m
250 x 4.6 mm,
Eluent: Water
Flow rate: 1 ml/min.
Detection: 210 nm

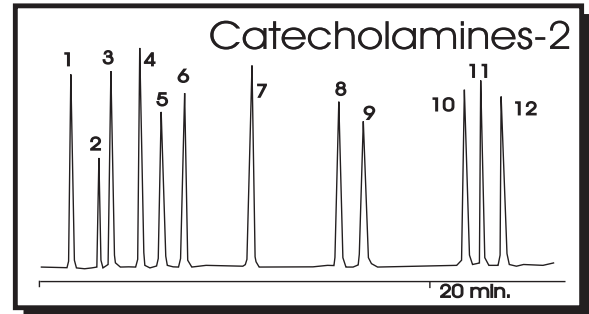


Column: ReproSil-Pur C18-AQ, 5 μ m

125 x 4 mm, Eluent: H₂O/ MeOH (4/6)

Flow rate: 0,8 ml/min.

1=Cortisone 2=Hydrocortisone
3=Corticosterone, 4=Cortisone Acetate



Column:

ReproSil-Pur C18-AQ, 5 μ m (250 x 4 mm)

1=Noradrenaline, 2=Adrenaline, 3=D/L-3,
4-Dihydroxymandelic Acid, 4=3,4-Dihydroxy-
phenylalanine, 5=Dopamine, 6=Tyrosine,
7=D/L-Methoxy-4-Hydroxymandelic Acid,
8=Phenylalanine, 9=4-Hydroxy-3-Methoxyphenyl-
glycol, 10=5-Hydroxyindole-3-acetic Acid,
11=Vanillic Acid, 12=Homovanillic Acid

Eluent:

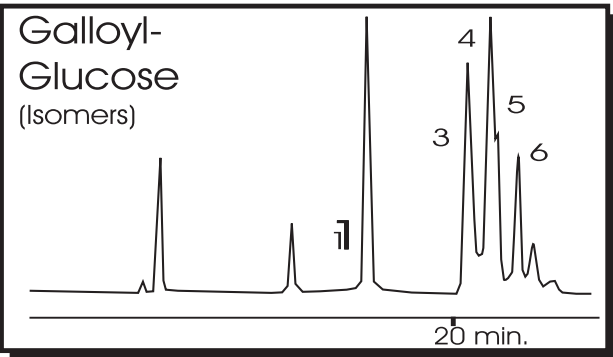
A=100 mM Na-Phosphate, pH=3.0 B=ACN,

Gradient: 20 min. 1% B, then 15 min. 15% B

Detection: 210 nm, Injection: 50 - 200 μ l/ml

ReproSil-Pur RP18-NE

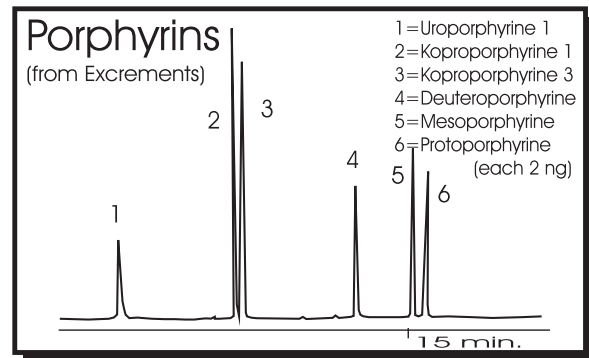
NE= not endcapped!



Column: ReproSil-Pur RP18-NE, 5 μ m (250x4 mm),

Flow rate: 0,7 ml/min., Detection: 280 nm

Eluent: A=0.05 % H₃PO₄ B: ACN, Gradient



Column: ReproSil-Pur RP18-NE, 5 μ m (125x4mm),

Flow rate: 1ml/min. Detection: 405/630nm Fluorimetr.

Eluent: A=10mm KHPO₄, pH5.4 B=5mM Tetrabutyl-
ammoniumphosphate pH-7.3 in MeOH, Gradient

Peptides and Proteins

Peptide from β -Myosin

(More than 100 peptides)

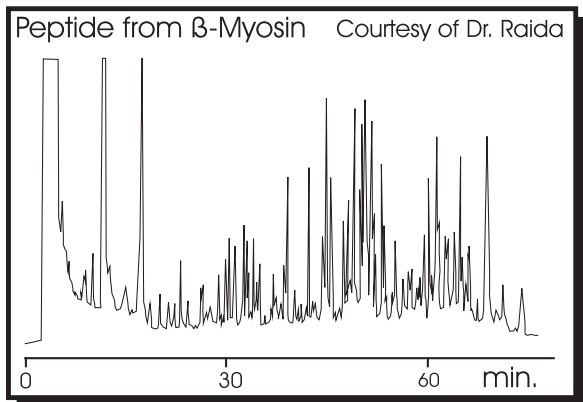
(Endoproteinase-Lys-C Digest)

Column: ReproSil-Pur 120 C18-AQ,

3 μm (100 x 1 mm iD) Eluent: A= H₂O B=ACN

Gradient: 0,5 % increase/min. Flow rate: 20 $\mu\text{l}/\text{min}.$,

Detection: 220 nm



Peptides from BSA-Digest

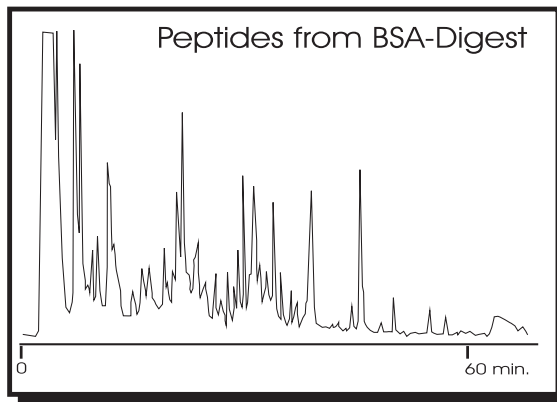
(Trypt. Digest)

Column: Stability BS C23, 5 μm (100 x 1 mm iD)

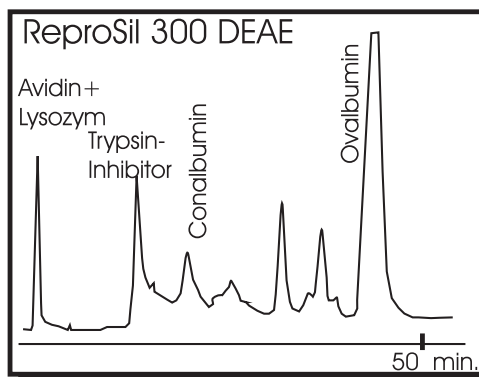
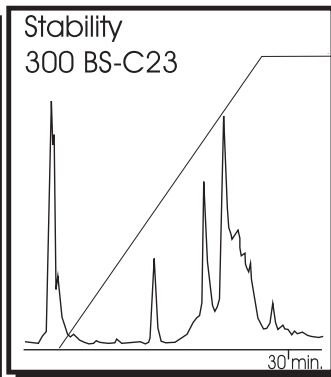
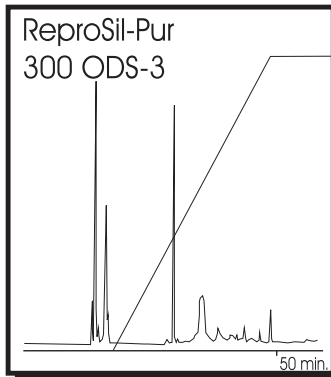
Eluent: A= 0,06% TFA B=0,05 % TFA in ACN

Gradient: 1% B - 60% B in 120 min. then 5 min. to

95 % B, Flow rate: 20 $\mu\text{l}/\text{min}.$, Detection: 215 nm



Mixture of Proteins from endothelial. Cell Culture



Eluent: Gradient 5% ACN / 0,1 % TFA to 95 % ACN / 0,1 % TFA

ReproSil-Pur 300 ODS-3 5 μm , 250 x 4 .6mm

Flow rate: 1 ml/min.

Stability 300 BS-C23, 5 μm 125 x 3 mm,

Flow rate: 0,4 ml/min.

ReproSil 300 DEAE, 5 μm (250 x 4.6 mm)

Eluent:

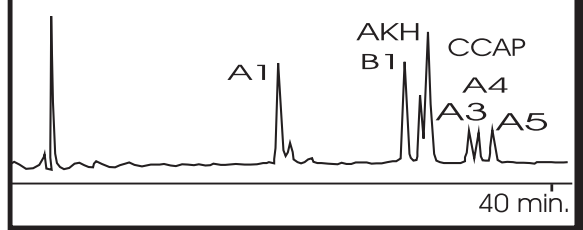
A=50mM TrisHCl pH7.5 B=A+0,5 M NaCl

0-30% B in 30 min., Flow rate: 1 ml/ min.

Det.: 220 nm, Sample: Fresh egg white.

Peptide Hormones

Allatostatine+AKH+CCAP



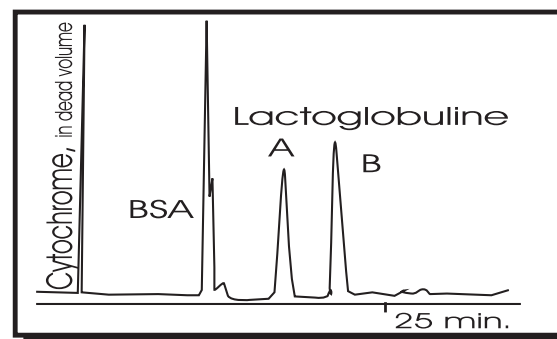
Column: ReproSil-Pur 300 ODS-3, 5 μm

(250x3 mm) Eluent: A: 0,115% TFA in Water B: 0,1%

TFA in ACN Gradient: 0- 40 min., 15% - 27% B

(0,3% / min.) Flow rate: 0,4 ml/min.,

Detection: 214 nm



Column: Stability Polyamine, 5 μm

(53 x 4.6 mm) Eluent: A=20 mM TRIS-pH7,

B= 1M NH₄OAc-pH7 Gradient: 0 - 100% B in 20 min.

Detection: 280 nm, Flow rate: 1 ml/min.

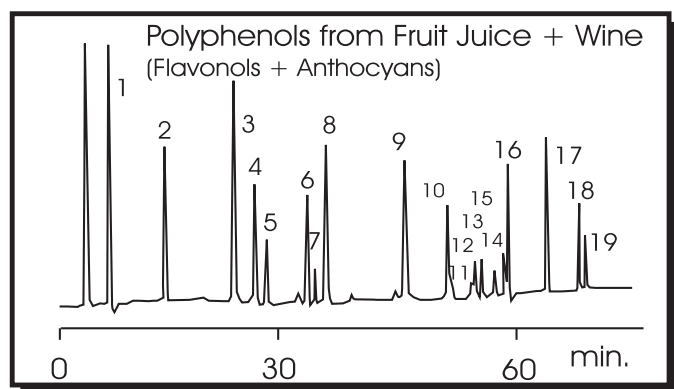
Fluofix + Fluosil

Fluofix is a fluorocarbonaceous, silane-bonded silica-gel phase for HPLC modified with: "Tridecafluoro-(4,4-Dimethyl heptyl)" silane.

- Advantages of Fluofix: 1.) Group separation of mixtures of basic and acidic compounds
2.) Precise separation of geometric isomers
3.) Separation of fluorinated or chlorinated compounds
4.) More stable than C4 or C8 phases



Eluent: MeOH/H₂O (65/35)
Flow rate: 1 ml/min.
Dimension: 150 x 4.6 mm
Temperature: 40 °C
Detection: 254 nm



Column: Fluofix 120E, 5 μm (250 x 4.6mm)

Flow rate: 1 ml/min.

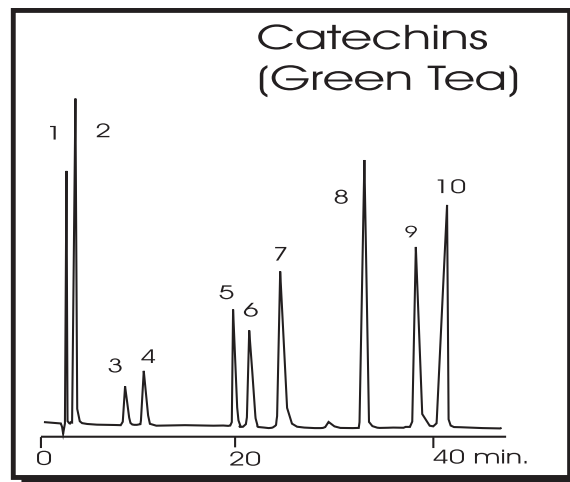
Gradient: A: water / 85% o-Phosphoric acid (99,5 / 0,5, v/v)

B: ACN / Water / 85% o-Phosphoric acid (50/49,9/0,5)

0-5 min.: 0% B, 5-45 min.: to 25% B, 45-64 min.: to 80 % B,

65-70 min.: to 100% B, until 84,9 min. 100% B.

Sample: 1=Gallic Acid, 2=Protocatechinic Acid, 3=Tyrosol, 4=(+)Catechine, 5=Procyanidin B2, 6=Coffee Acid, 7=Chlorogenic Acid, 8=(-)Epicatechine, 9=p-Cumaric Acid, 10=Ferulic Acid, 11=Quercetin-3-galactoside, 12=Quercetin-3-rutinoside, 13=Quercetin-3-glucoside, 14=Quercetin-3-arabinoside, 15=Phloridzin, 16=tr-Resveratrol, 17=Quercetin, 18=Kaempferol, 19=Phloretin



Column: Stability Fluosil, 5 μm

250 x 2 mm, Flow rate: 0.3 ml/min.

Temperature: 25 °C, Injection: 10 μm

Eluent: A: 0,1 % H₃PO₄ (85%)/ 49,9 % water /

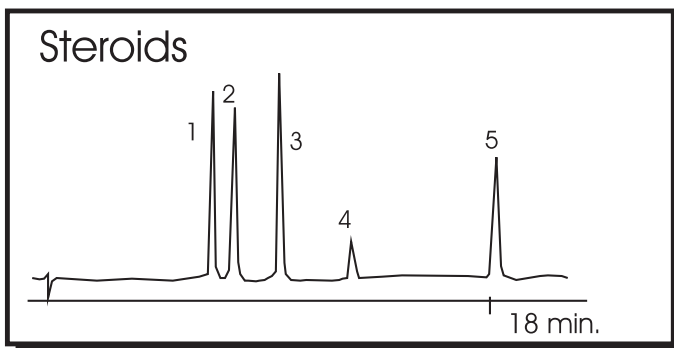
MeCN (v/v/v), B: 0,1 % H₃PO₄ (85%) in water

Sample: 1=Pyrogallol, 2=Gallic Acid, 3=EGC

4=Catechine, 5=Theobromine, 6=Epicatechine

7= Epigallocatechingallate, 8=Caffeine,

9=Epicatechingallate, 10=p-OH-Bs-methylester (IS)



Column: Stability Fluosil 3 μm,

100 x 2 mm

Eluent: A: Water (0,05% TFA)

B: ACN (0,04% TFA)

Gradient:

Sample:

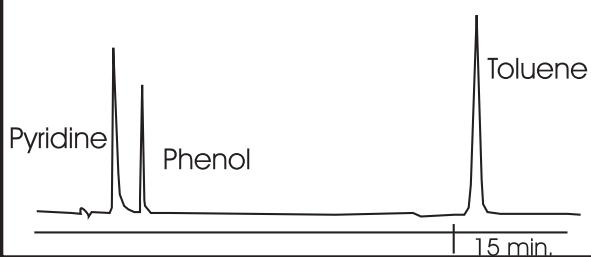
1.) Prednisone 2.) Prednisolone

3.) Deltaxenol 4.) Hydrocortisone acetate

5.) Deltacortinene acetate

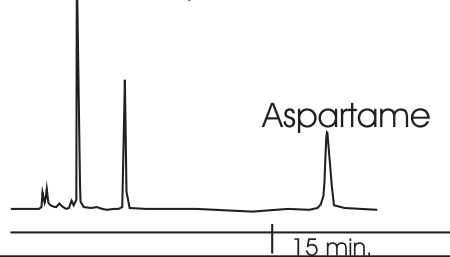
ReproSil 100 C18

Selectivity: Pyridine, Pyridine and Toluene



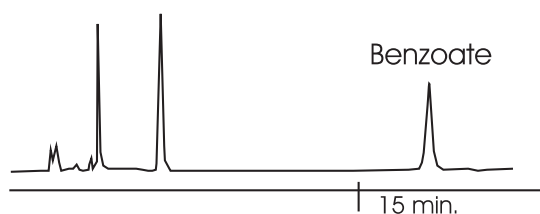
ReproSil 100 C18, 5 μ m, 250 x 4 mm
 Eluent: 25 mM NaPO₄ / 50 % ACN
 Flow: 1 ml/min. Det. UV 254 nm

Aspartame in Sweets



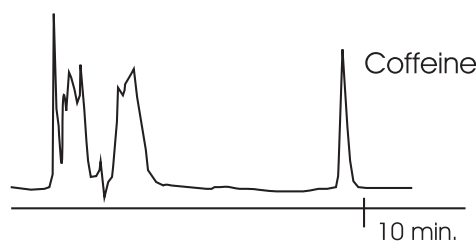
ReproSil 100 C18, 5 μ m, 250 x 4 mm
 Eluent: Water / MeOH / phosphoric acid (40:59,5:0.5)
 Flow: 0.8 ml/min. Det.:203 nm

Preservative in Ketchup



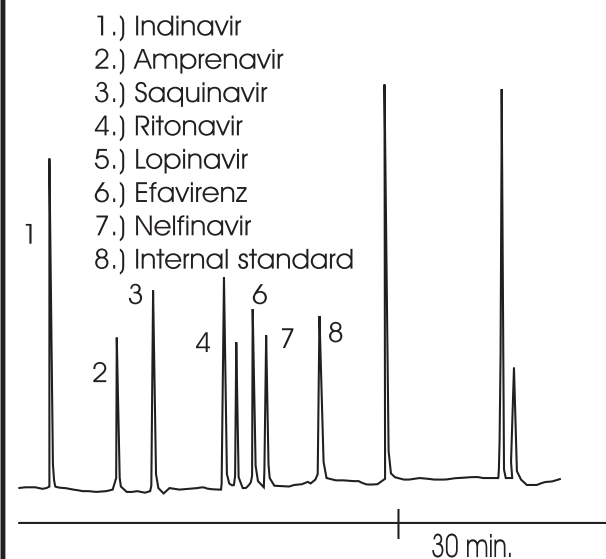
ReproSil 100 C18, 5 μ m, 250 x 4 mm
 Eluent: MeOH / Acetate buffer 40:60
 Flow: 1 ml/min. Det.:UV 230 nm Temp.:35 C°
 Sample: 10 μ l Ketchup extract

Caffeine in Coffee



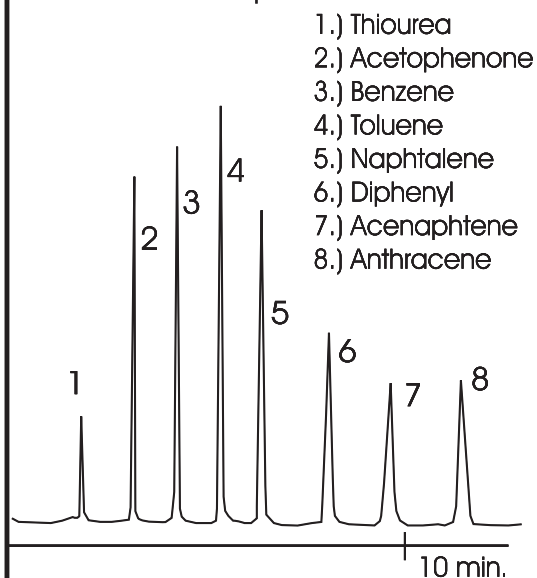
ReproSil 100 C18, 5 μ m, 250 x 4 mm
 Eluent: MeOH / Acetate buffer 32:68
 Flow: 0.8 ml/min. Det.:270 nm Temp.:35 C°
 Sample: 10 μ l coffee extract

HIV - Inhibitors



ReproSil (Stability)100 C18, 5 μ m, 250 x 4.6 mm
 Eluent: 50 mM Phosphate buffer pH=5.65 / ACN
 Gradient: from 36 % to 64 % ACN in 25 min.
 then 19 min. at 80% ACN.

Aromatic compounds



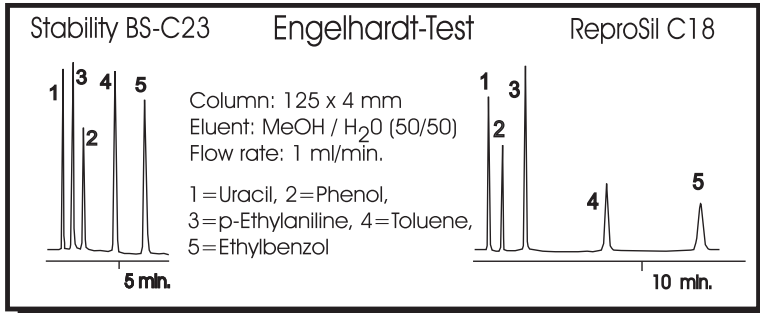
ReproSil 100 C18, 5 μ m, 250 x 4 mm
 Eluent: ACN / water 70:30
 Flow: 1 ml/min. Det. UV 254 nm

Stability BS-C23 (BS-C17, BS-C13)

BS-C23: A unique RP-phase with positive charge under a C18 C-chain.

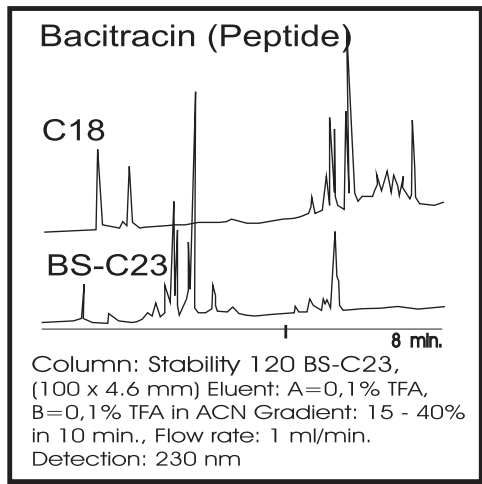
BS-C17: A unique RP-phase with positive charge under a C12 C-chain.

BS-C13: A unique RP-phase with positive charge under a C-8 C-chain.

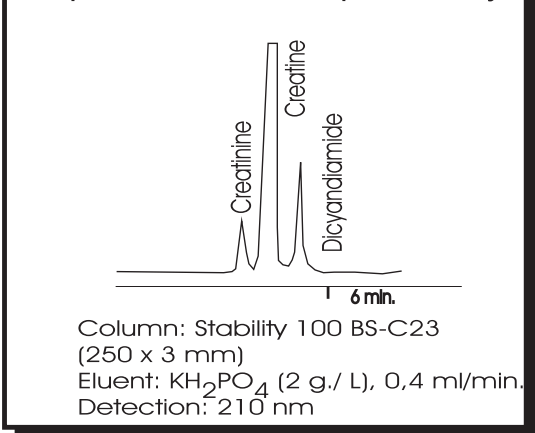


Comparison of different Selectivities

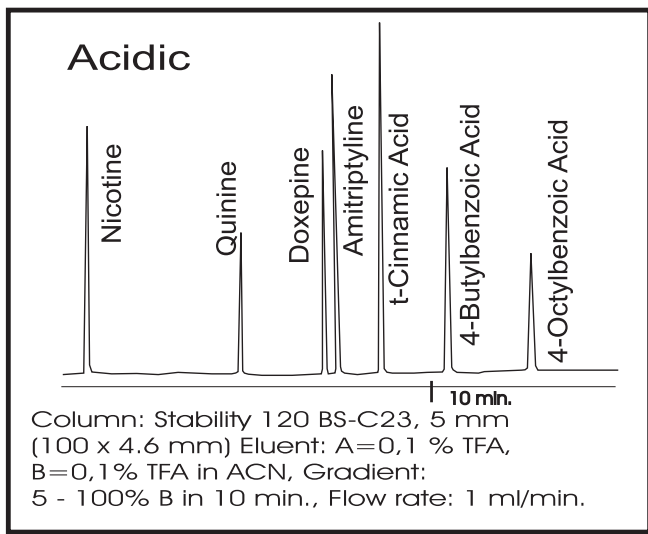
Different Selectivity!



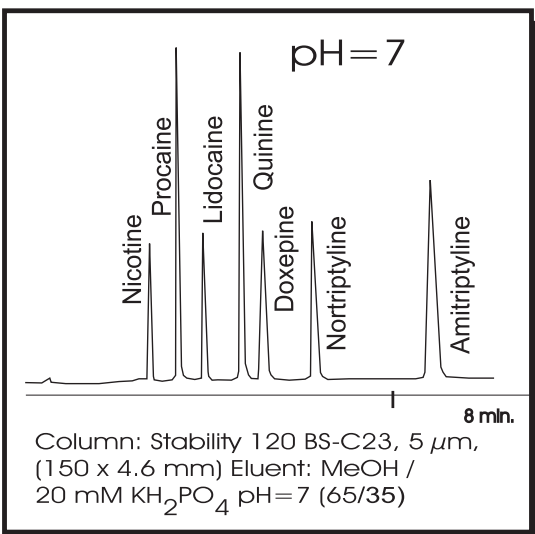
C8-phases show two peaks only!



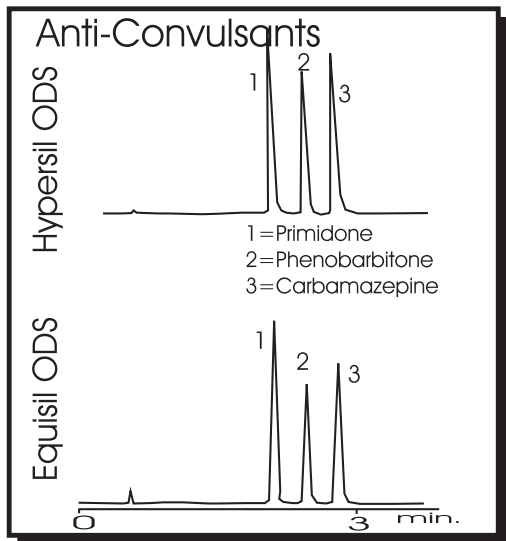
Acidic



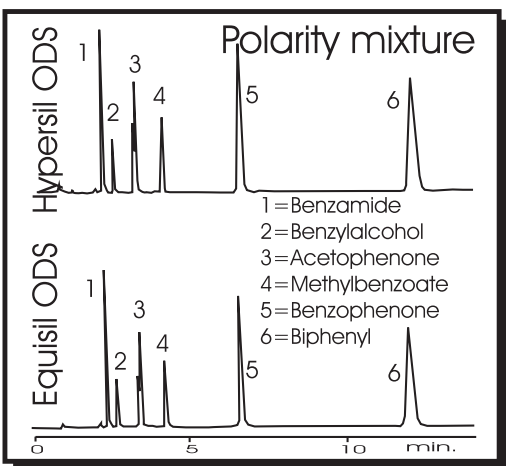
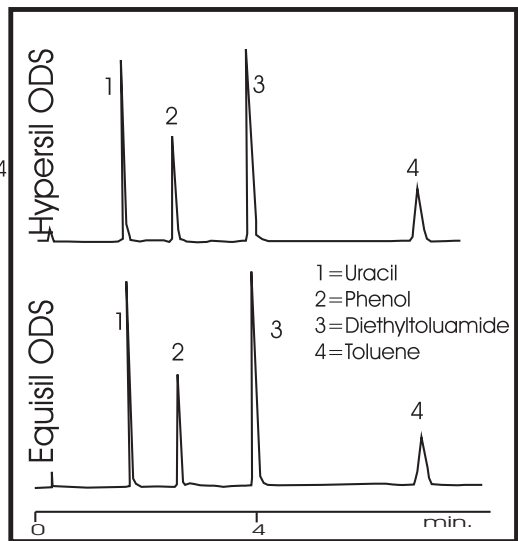
pH=7



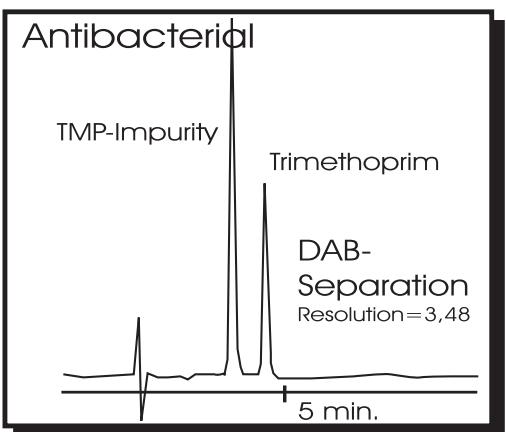
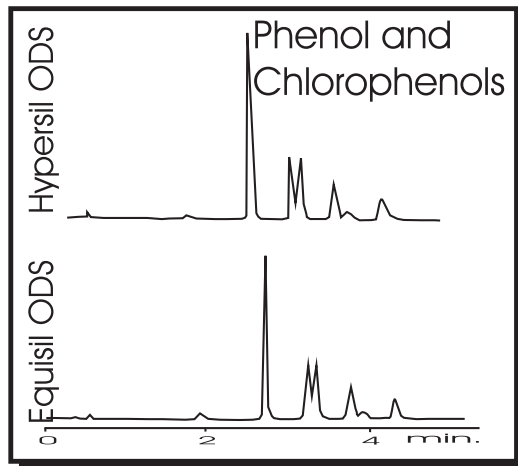
Equisil, an alternative for Hypersil



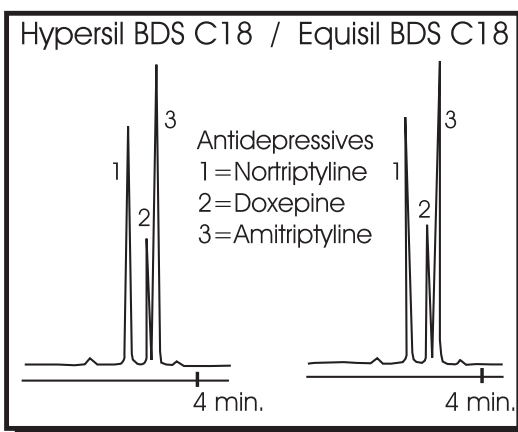
Columns:
150 x 4.6 mm
Eluent:
MeCN / 50 mM KH₂PO₄
50/50, pH3,
Flow rate:1 ml/min



Columns:
150 x 4.6 mm
Eluent:
MeCN / 50 mM
KH₂PO₄
50/50, pH3,
Flow rate:1 ml/min



Column:
Equisil BDS C18, 5 μ m, 250 x 4 mm,
Eluent:30% MeOH / NACIO₄ (1.4 g/l)
pH=3.6, adjust. With phosphoric acid
Flow rate:1.3 ml/min.



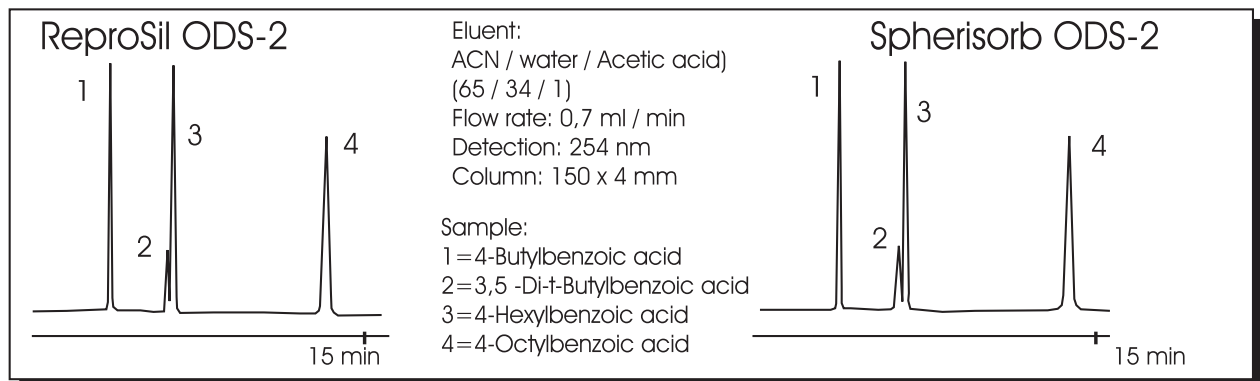
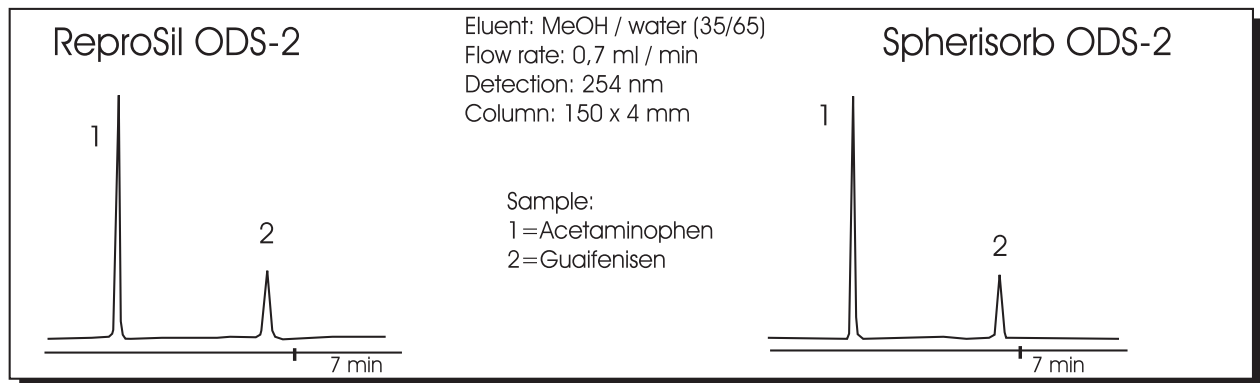
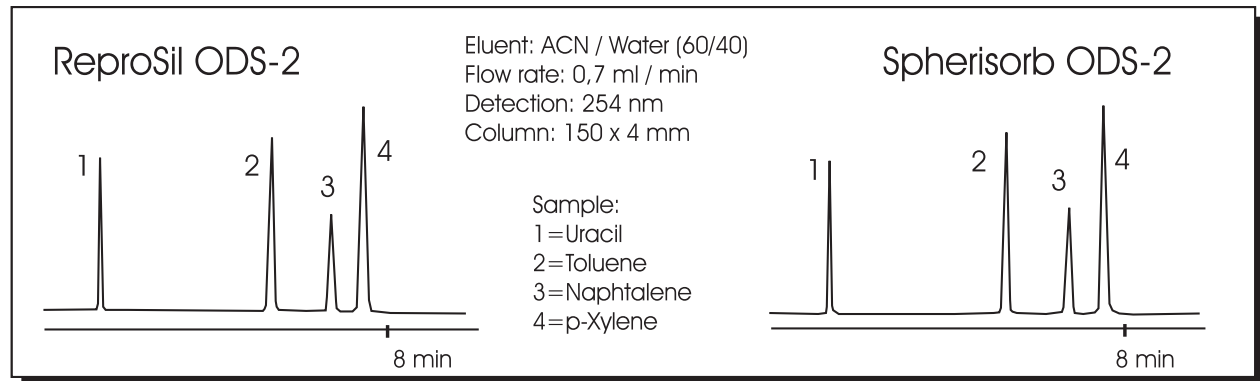
Eluent: 50% ACN / 50% 50 mM KH₂PO₄,
pH=3, Flow: 1 ml/min.
Column-dimension: 150 x 4.6 mm,
Particle size: 5 μ m

ReproSil ODS-2, an alternative for Spherisorb ODS-2

ReproSil (80) ODS-2 has the same chemical and physical parameters as Spherisorb ODS-2:
 Pore size: 80 Å, surface area: 220 m²/gr., Carbon loading: 12 %

As shown in the chromatograms:

ReproSil ODS-2 offers a convenient alternative for Spherisorb ODS-2.



ReproSil 100 Chiral-NR (OH, CA, PS)

ReproSil Chiral-NR is designed for chiral separations in Normal- and Reversed phase mode. It has a similar broad chiral generality comparable with polysaccharide-derived chiral stationary phases.

The chiral selector, an aromatic compound, is covalently bound to the ultrapure Reprosil 100 Silica. Due to the 100Å pores and the big surface area of 350 m²/g the phase has an excellent preparative capacity. With a 250 x 10 mm column one can separate 50 – 250 mg / injection and with a 250 x 20 mm column 250 – 1000 mg/ injection.

The phase is stable in all commonly used eluents, including aqueous systems. Typical eluents in the normal-phase mode are mixtures of Hexane and 2-Propanol, in the reversed phase mode the typical eluents are MeOH / water mixtures. The best pH-range is between 2 und 7, and the columns are stable up to 300 bar.

The peak shape of acids can be improved with 0,1 % acetic acid, the peak shape of bases with 0,1 % TEA. With 0,01% Ammonium Acetate a good peak shape can be achieved both with acids and with bases. Reprosil Chiral-NR allows the separation of underivatized racemates like: Amides, Epoxides, Esters, Carbamates, Ethers, Aziridines, Phosphonates, Aldehydes, Ketones, Carboxylic acids, Alcohols and Ureas.

Aromatic rings and a Oxygen atom (Carbonyl, hydroxyl function) very near to the chiral centre are important for the chiral recognition.

Examples for Separations:

The most commonly used column dimension is 250 x 4.6 mm with a flow of 1,5 ml / min.

Normal Phase:

Abscisic acid:	Eluent: Hexane / IPA (85/15) + 0,1 % Acetic acid
Anisoin:	Eluent: Hexane / IPA (80/20) + 0,5 % Acetic acid
Benzoin:	Eluent: Hexane / IPA (80/20) + 0,5 % Acetic acid
Bupivacaine:	Eluent: Hexane / IPA (80/20) + 0,1% TEA
Bromacil:	Eluent: Hexane / IPA (98/2)
Cycloprofen:	Eluent: Hexane / IPA (80/20) + 0,1 % Ammonium acetate
Cyclophosphamid:	Eluent: Hexane / Ethanol (95/5)
Chlormezanone:	Eluent: Hexane / IPA (60/40)
2,2'-Diamino-1,1'-Binaphthyl	Eluent: Heptane / Ethanol (90 / 10)
Dihydrotertabenazine:	Eluent: Hexane / IPA (60/40) + 0,1 % TEA
Fenoprofen:	Eluent: Hexane / IPA (98/2) + 0,1 % Acetic acid
Hydrobenzoin:	Eluent: Hexane / IPA (95/5)
Ibuprofenol:	Eluent: Hexane / IPA (99/1)
Ibuprofen:	Eluent: Hexane / IPA (90/10) + 0,01 % Ammonium acetate
Indapamide:	Eluent: Hexane / IPA (50/50)
Ketamine:	Eluent: Hexane / IPA (99/1) + 0,1 % TEA
Ketorolac:	Eluent: Hexane / IPA (98/2) + 0,1 % TFA
Ketopropfen:	Eluent: CH ₂ Cl ₂ / Hexane / Ethanol (47/47/6) + 0,01 M Amm. Acetate
Lorazepam:	Eluent: Hexane / IPA (70/30) + 0,1 % Acetic acid
Loxoprofen:	Eluent: Hexane / Ethanol (85/15) + 0,01 M Ammonium acetate
2-Methyl-1-Indanone:	Eluent: Hexane / IPA (99/1)
Mecoprop:	Eluent: Hexane / IPA (99/1) + 0,1 % Acetic acid
Metolazone:	Eluent: Hexane / Ethanol (55/45)
α-Methoxyphenyl-Acetic acid:	Eluent: Hexane / Ethanol (90/10) + 0,01 % Ammonium acetate
N-(1-(4-Bromo-Phenyl)-2-methylene-3-oxo-Butyl) –4-Methyl-Benzenesulfonamide:	Heptane / Ethanol (90/10)
Nadolol:	Eluent: Hexane / Ethanol (78/22) + 0,01 M Ammonium acetate
Naproxen:	Eluent: Hexane / IPA (60/40) + 0,1 % Acetic acid
Nicardipine:	Eluent: Hexane / IPA (73/27) + 0,1 % Acetic acid
Nirvanol:	Eluent: Hexane / IPA (80/20)
Ofloxacin:	Eluent: CH ₂ Cl ₂ / Hexane / Ethanol (43/43/14) + 0,01 M Amm. acetate

Oxazepam:	Eluent: Hexane / IPA (75/25) + 0,01 % Ammonium acetate
Permethrin:	Eluent : Hexane + 0,2 % IPA
2-Phenylcyclopropan-Carboxylat:	Eluent: Hexane / IPA (99/1)
Progumide:	Eluent: Hexane / IPA (75/25) + 0,1 % Acetic acid
Propafenone:	Eluent: CH ₂ Cl ₂ / Hexane / 0,01 M Ammonium acetate (47/47/6)
Resmethrin:	Eluent: Hexane
Styrene-Oxid:	Eluent: Hexane / IPA (99/1)
Stilbene Oxid:	Eluent: Hexane / Ethanol (90 / 10)
Sulfinpyrazone:	Eluent: Hexane / Ethanol (75/25) + 0,15 M Ammonium acetate
Temazepam:	Eluent: Hexane / IPA (80/20) + 0,1 % Acetic acid
Terfenadine:	Eluent: Hexane / Ethanol (97/3) + 0,01 m Ammonium acetate
Tiaprofenic acid:	Eluent: Hexane / IPA (80/20) + 0,1 % Acetic acid
Tolperisone:	Eluent: Hexane / IPA (99/1) + 0,1 % TEA
Trolox:	Eluent: Hexane / IPA (95/5) + 0,1 % Acetic acid
Vanilmandelic acid:	Eluent: Hexane / Ethanol (85/15) + 0,01 M Ammonium acetate
Warfarin:	Eluent: Hexane / IPA (65/35) + 0,1 % Acetic acid
Zopiclone:	Eluent: CH ₂ Cl ₂ / Ethanol (95/5) + 0,01 M Ammonium acetate

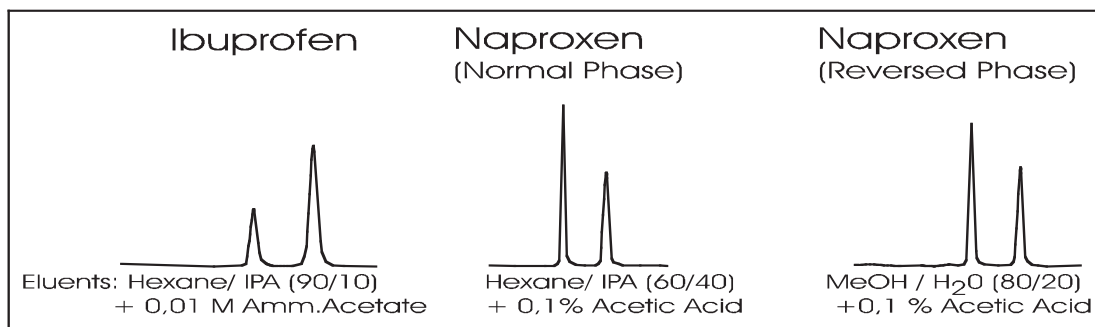
Reversed-Phase:

Isradipine:	Eluent: MeOH / H ₂ O (63/37)
Kynurenine:	Eluent: MeOH / H ₂ O (65/35) + 0,1 % Acetic acid
Mandelic acid:	Eluent: H ₂ O + 0,1 % Acetic acid
Naproxen:	Eluent: MeOH / H ₂ O (80/20) + 0,1 % Acetic acid
Nimodipine:	Eluent: MeOH / H ₂ O (65/35)
p-Chloro-Warfarin:	Eluent: MeOH / H ₂ O (85/15) + 0,1 % Acetic acid
Warfarin:	Eluent: MeOH / H ₂ O (70/30) + 0,1 % Acetic acid

Method development for Normal-Phase Separations:

- 1.) Start off with a mixture of Hexane / IPA (50/50).
- 2.) If the RT is too short, add less IPA; if the RT is too long, add more IPA.
- 3.) Peak-Tailing
with acids: use 0,1 % Acetic acid,
with bases: use 0,1 % TEA.
You can improve the peak shapes in both cases with 0,01 % Ammonium acetate.
- 4.) The method can be further optimized by replacing Hexane with Heptane and / or IPA with Ethanol.

Examples: Reprisil Chiral-NR, 8 µm, 250 x 4.6 mm, Art.No.: r18.nr.s2546



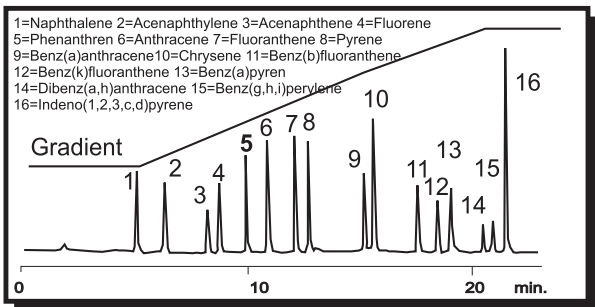
Other chiral phases from Reprisil family are:

- Reprisil Chiral-OH – for chiral aromatic compounds with **OH** at the chiral centre, like Aryl Carbinols.
- Reprisil Chiral-CA - for chiral aromatic compounds with a **Carboxylic Acid** group, like Ibuprofen, Etodolac.
- Reprisil Chiral-PS – for chiral aromatic compounds with **P** or **S**, like Sulfoxides, Phosphines, Phosphonates.

Environmental Analysis

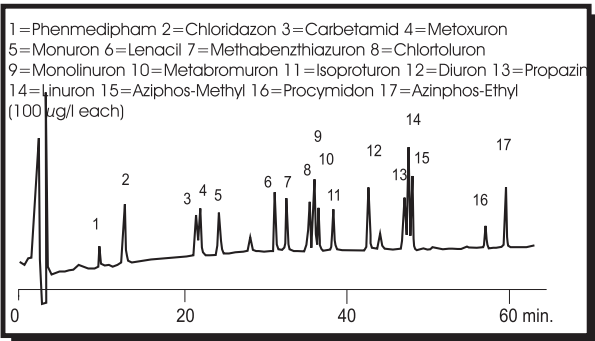
Analysis of 16 PAHs (EPA 610)

Column: ReproSil PAH-EPA, 5 μ m 250 x 4 mm)
 Eluent: A=H₂O B=ACN, Gradient: 0 min. 50% B, 5 min. 50% B, 15 min. 85% B, 20 min. 100% B, 25 min. 100% B,
 Opt. temperature: 20-30 C°, Detection: Fluor. or UV at 254 nm



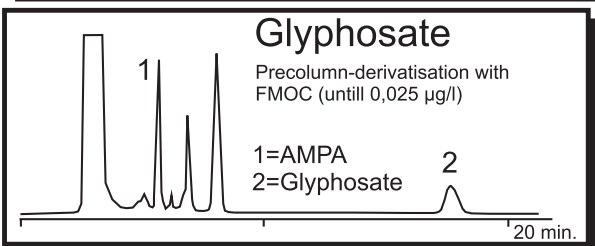
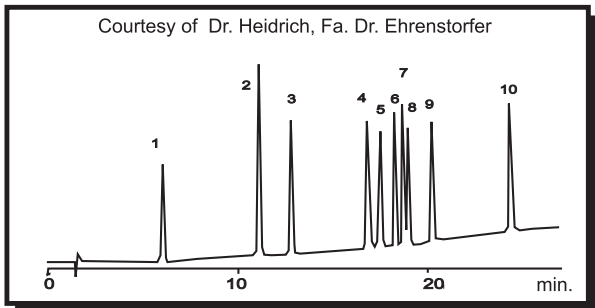
Pesticides

Column: ReproSil Pestizid III, 5 μ m (250 x 4 mm)
 Eluent: A=85% 1 mM NH₄-Acetate + 15% ACN B=95% ACN + 5% NH₄-Acetate
 Gradient: 0 min. 0% B, 55 min. 55% B, 75 min. 100% B
 Flow rate: 0.9 ml/min. Detection: 230 nm Injection: 50 μ l



Pesticides (Urea-Derivates)

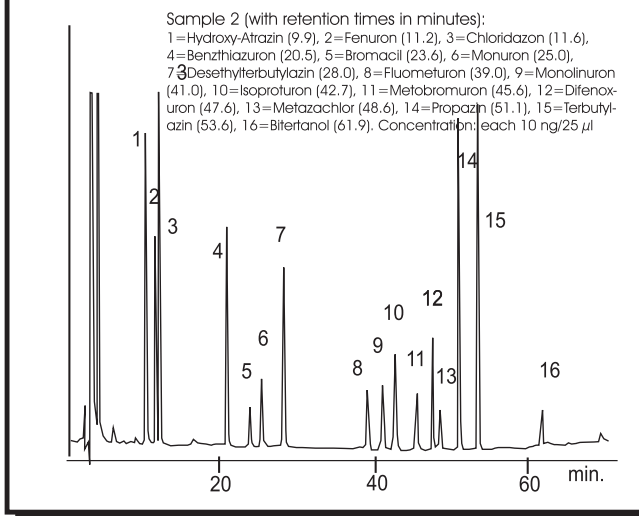
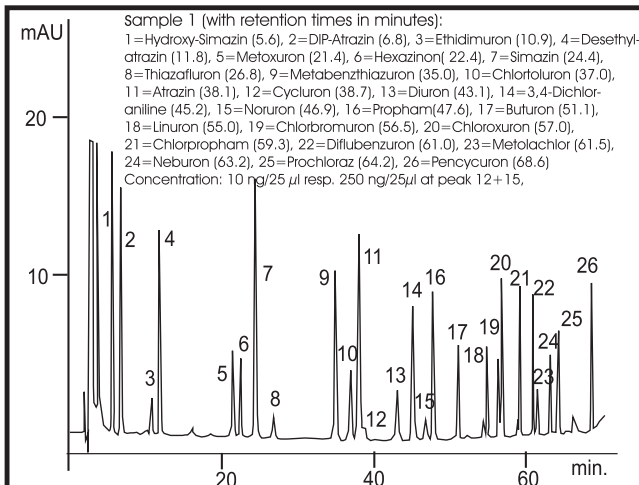
Column: ReproSil-Pur C18-AQ, 5 μ m (250 x 3 mm)
 Eluent: A=H₂O (0,5% H₃PO₄) B=ACN
 Gradient: 4:1 to 1:4 in 30 Min. Flow: 0.5 ml/min. Injection: 5 μ l
 Detection: 243 nm
 1=Fenuron 2=Metoxuron 3=Monolinuron 4=Chlortoluron 5=Isoproturon
 6=Fluometuron 7=Monuron 8=Diuron 9=Metabromuron 10=Linuron



Column: Equisorb NH₂, 5 μ m
 Eluent: K-Phosphate-buffer, pH=5.8 / ACH (55/45)
 Flow: 1 ml/min. Det.: Fluoresc.: 260/310 nm (exc./ em.)

Analysis of 42 Pesticides

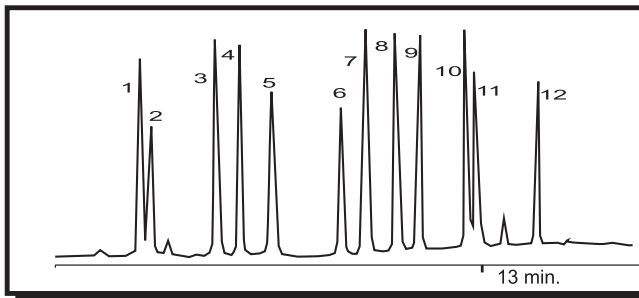
Column: ReproSil-Pesticide III, 5 μ m (250 x 3 mm) + Guard (5 x 3 mm)
 Eluent: A=1 mM NH₄-Acetate B= ACN Gradient: 0 min. 20% B, 40 min. 35% B, 80 min. 90% B, Temperature: 40 C°, Flow rate: 0,5 ml/min
 Detection: 230 nm Injection: 50 μ l (in H₂O/ACN 80/20)



Courtesy of Mr. Riebs and Mr. Dr. Heusinger, Chemische Landesuntersuchungsanstalt Freiburg

Carbamates

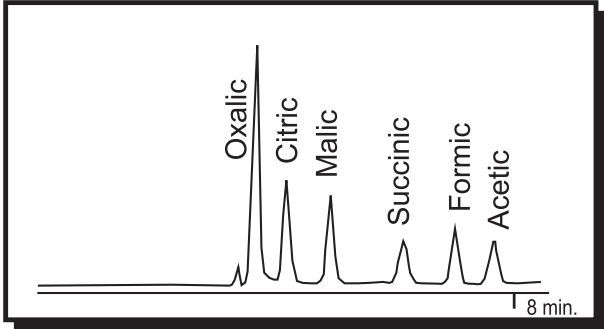
Column: ReproSil-Pur ODS-3, 5 μ m (150 x 4,6 mm)
 Eluent: A=H₂O B=ACN
 Gradient: 0 -3,5 min. (ACN/H₂O, 40/60) isocratic
 3,5 min. - 10,5 min: from 40% to 90% ACN
 10,5 min. - 13,5 min. ACN/H₂O (90/10) isocratic
 Flow rate: 1 ml / min. Injection: 20 μ m Detection: 210 nm



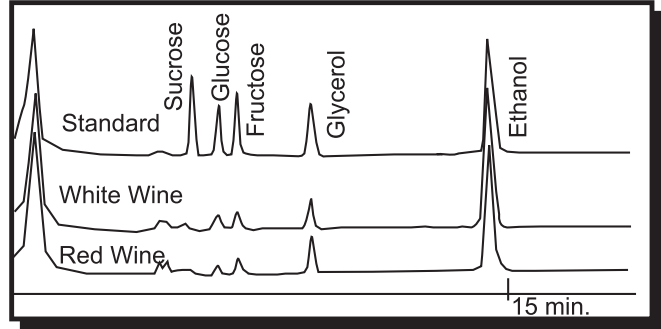
Sample:
 1=Aldicarb Sulphone 2=Methomyl 3=Carbetamide 4=Aldicarb
 5=Thiodicarb 6=Primicarb 7=Carbaryl 8=Thiram 9=3,4,5-Trifmethacarb
 10=Phenmedipham 11=Diethofencarb 12=Fenoxycarb

Sugars, Acids and Alcohols

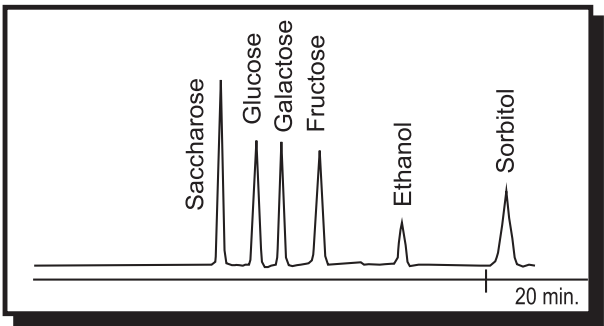
Organic acids: Repro-Gel H, 9 μm (250 x 8 mm)
 Eluent: 9 mM Sulfuric Acid, Flow rate: 1 ml/min., Det.: 210 nm



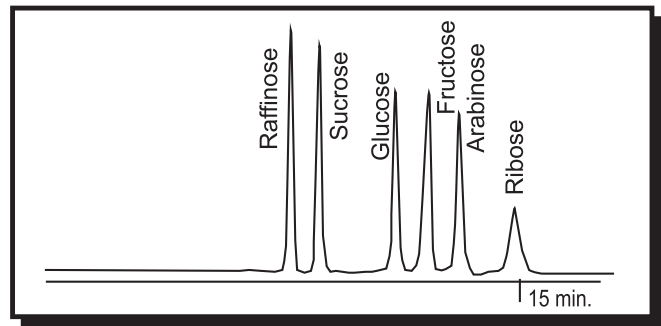
Red Wine: Repro-Gel H, 9 μm (250 x 8 mm)
 Eluent: Water, Flow rate: 0,7 ml/min. Temperature: 25 C°,
 Injection: 20 μl . Acids are retained with 20 x 4,6 mm SAX-Guard-Column.



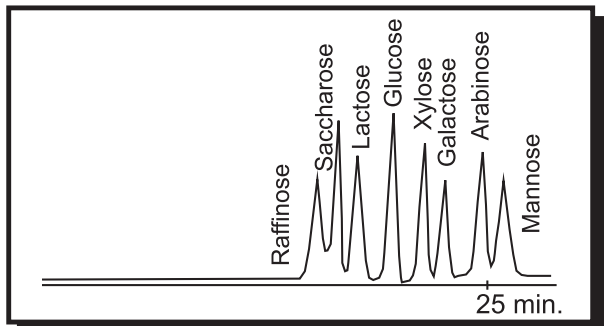
Sugars and Alcohols: Repro-Gel-Ca, 9 μm (250 x 8 mm)
 Eluent: H2O, Flow rate: 0,5 ml/min. Temperature: 80 C°,
 Detection: RI, 35 bar



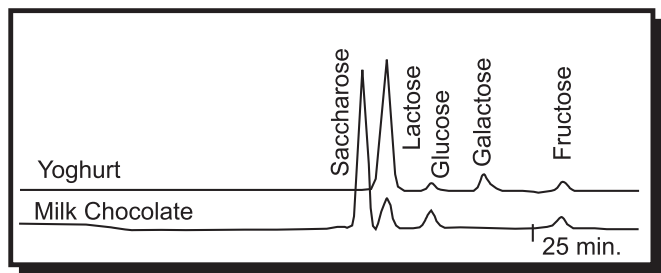
Sugars: Repro-Gel-Na, 9 μm (250 x 8 mm)
 Eluent: Water, Flow rate: 0,5 ml/min., Temperature: 80C°, Detection: RI,
 Pressure: 45 bar



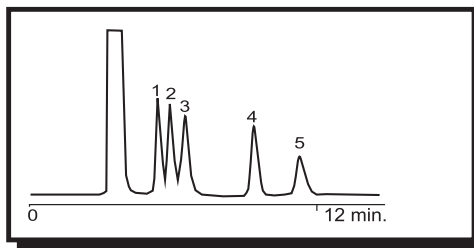
Sugars: Repro-Gel-Pb, 9 μm (250 x 8 mm), Eluent: H2O, Flow
 rate: 0,3 ml/min., Temperature: 80 C°, Detection: RI, Pressure: 25 bar



Lactose: Repro-Gel-Ca, 9 μm (250 x 8mm)
 Eluent: water, Flow rate: 0,3 ml/min., Temperature: 80 C° Detection: RI

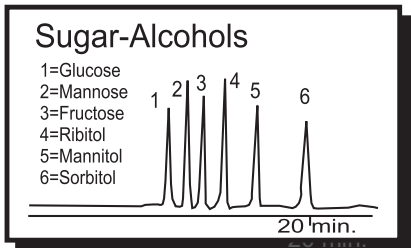


Sorbitol and Sugars: Stability Polyamin, 5 μm (NH2 on Silical)
 (250 x 4,6 mm), Eluent: ACN/H2O (80/20), Flow rate: 1 ml/min., Detection: UV-DA



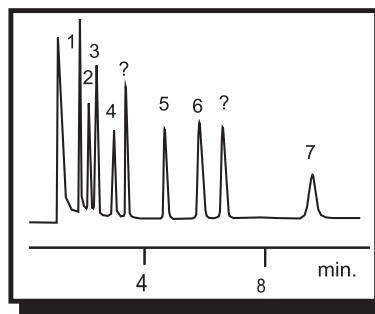
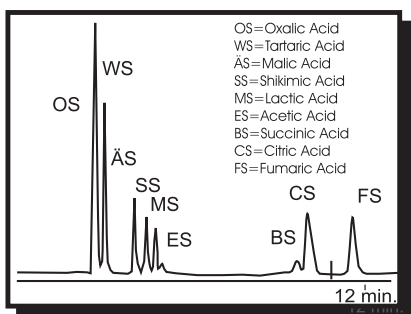
Sample:
 1=Fructose
 2=Sorbitol
 3=Glucose
 4=Saccharose
 5=Maltose

Repro-Gel-Ca,
 9 μm , 250 x 8 mm
 Flow rate: 0,5 ml/min
 Temperature: 80 C°
 Detection: RI
 Injection: 20 μl



Organic Acids
 (on C18-AQ Phase)

ReproSil-Pur C18-AQ
 5 μm , 200 x 4,6 mm
 Eluent: 200 mmol/L
 (20 g 85% H3PO4/l)
 Temperature: 20 C°,
 Detection: 230 nm



Sugars

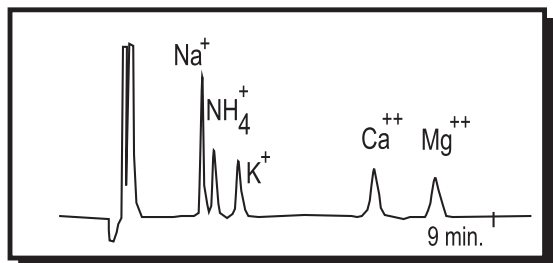
Column: ReproSil Polyamin,
 3 μm (60 x 4 mm)
 Flow rate: 0,8 ml/min
 Eluent: ACN/H2O (80/20)
 Detection: Diodenarray oder RI
 Sample: 1 =Rhamnose ,2=Xylose,
 3=Fructose, 4=Glucose,
 5= Sucrose, 6=Maltose,

Miscellaneous

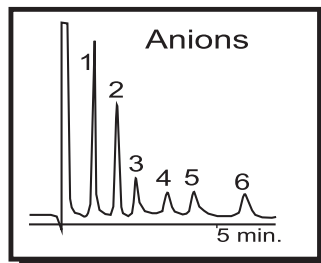
Anions and Cations

Simultaneous Analysis of 1- and 2-val. Cations

Column: ReproSil Cat, 5 μ m (or 7 μ m) (125 x 4.6 mm)
 Eluent: 5.0 mM Citric Acid + 0.5 mM 2,6 Pyridinedicarboxylic Acid
 or 0.6 mM Ascorbic Acid + 3.3 mM Phosphoric Acid pH 2,7

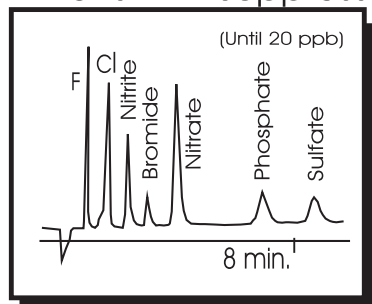


Anions with indirect UV

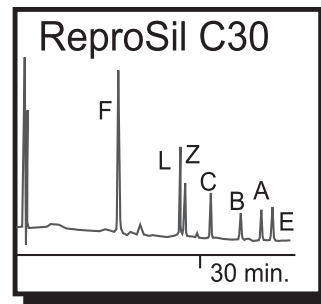


Column: ReproGel AX, 10 μ m (150 x 4 mm)
 Eluent: mM K-Hydrogen-Phthalat (pH 6,0)
 Flow rate: 1.2 ml, Injection: 100 μ l
 Detection: Indirect, UV at 280 nm,
 Sample:
 1=Fluoride 2=Chloride 3=Nitrite
 4=Bromide 5=Nitrate 6=Sulfate
 (10 ppm each)

Anions with Suppressor

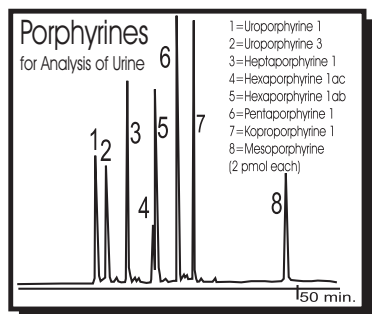


Column: ReproGel AXS 150 x 4 mm
 Eluent: 1,7 mM Natrium-Bicarbonat/1,8 mM Na-Carbonat/ 0,1 mM Na-Thiocyanat
 Temperature: RT
 Flow rate: 2ml/min.
 Injection: 100 μ l



Carotinoids + Chlorophyll

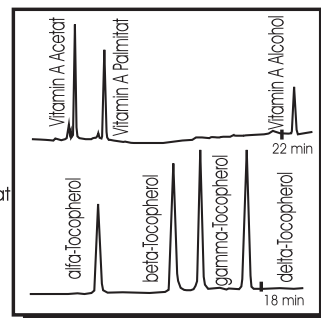
ReproSil 100 C30, 5 μ m 250 x 3 mm
 Flow: 0.9 ml/min.
 Eluent: A: Water/ACN (50/50)
 B: MeOH / Aceton (60/40)
 Gradient:
 Sample: F=Fucoxanthin
 L=Lutein, Z=Zeaxanthin
 C=Canthaxanthin, B=Chlorophyll B
 A=Chlorophyll A, E=Echinonone



Stability C18-NE, 5 μ m

125 x 3 mm
 Flow rate: 0,7 ml/min.
 Eluent: A: 40mM KH₂PO₄ pH5,4, B: 12,5 mm Tetra-butylammoniumphosphat pH7.3 in MeOH
 Gradient:

Courtesy of Prof. Jacob, Uni Klinikum Grobhadern



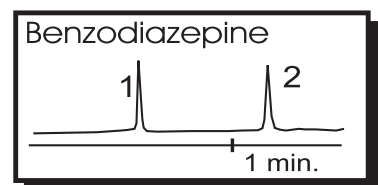
Vitamin A-deriv. + Tocopherols

ReproSil 100 CN, 5 μ m 250 x 4 mm
 Flow: 1.5 ml/min
 Detection: Fluoresc. (Tocopherols) 295 / 330 nm
 UV 325 nm (Vitamin A-deriv.)
 Eluent: A: n-Hexane
 B: tert-Butylmethylether
 Gradient: in 23 min from 98/2 to 80/20

High Speed-HPLC with Gold Columns

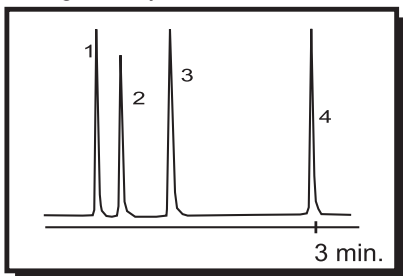
Benzodiazepine

1=Clonazepam
 2=Diazepam



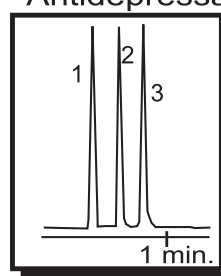
Column: Gold-Turbo 100 ODS, 1,5 μ m, 33 x 4.6 mm,
 Eluent: ACN / 0,1 % TFA (35/65)
 Flow: 1,5 ml / min.

Intermediates of Neurokinin-1 Receptor Antagonist Synthesis



Column: Gold-Turbo Amid-C12, 1,5 μ m, 33 x 4.6 mm,
 Eluent: Gradient A: Water/ 5% ACN B: ACN
 Flow: 2 ml / min.
 Courtesy of M. Althaus, Hoffmann-La Roche

Antiarythmics + Antidepressants



1.) Procaine
 2.) Diphenhydramine
 3.) Amitriptyline

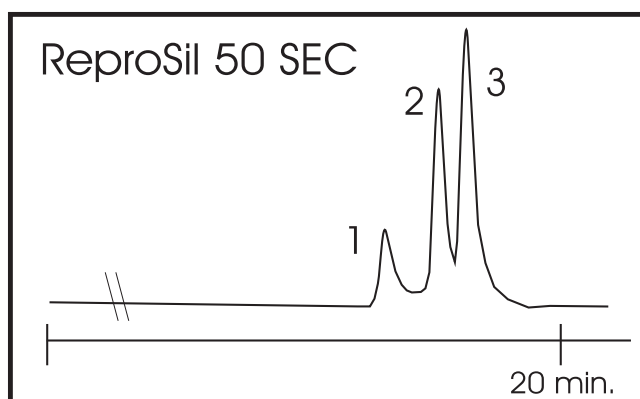
Column: Gold-Turbo ODS-MS, 1,5 μ m, 33 x 4.6 mm,
 Eluent: 50 % ACN / 50 % 50 mM KH₂PO₄, pH=3
 Flow: 1 ml / min.

ReproSil SEC - for Size Exclusion

Reprosil SEC phases are designed for the Gel Filtration Chromatography (GFC) of proteins, peptides and other org. polymers in aqueous systems. In GFC elution order is a function of molecular weight, the largest molecules eluting first and the smallest last.

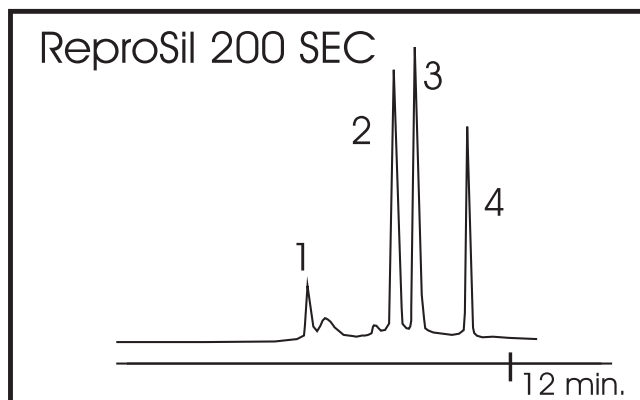
The Silica-based Reprosil SEC packings are available with 3 different pore sizes:

Packing:	Pore size:	Molecular weight range	
		of Proteins:	of Linear Molecules: (denaturated proteins, peptides, other org. Polymers)
Reprosil 50 SEC -	50 Å	8 000 - 30 000 D	500 - 10 000 D
Reprosil 200 SEC -	200 Å	10 000 - 500 000 D	2 000 - 70 000 D
Reprosil SEC 4000 -	450 Å	20 000 - 5 000 000 D	4 000 - 500 000 D



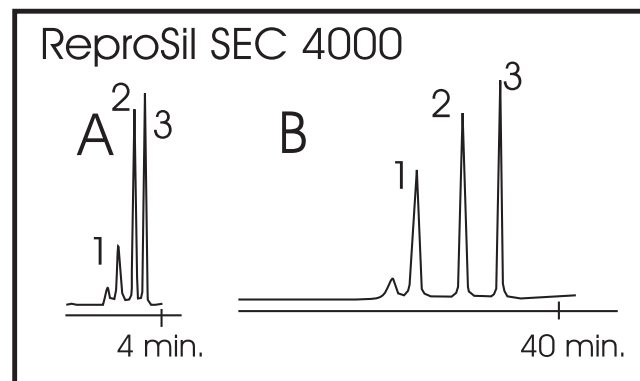
Column:
Reprosil 50 SEC, 5 μ m (300 x 8 mm)
Flow: 0,5 ml / min
Eluent:
50 mM KH₂PO₄ + 100 mM KCL, pH 6,5

Peptide Sample:
1 = MW: 3894 D
2 = MW: 1593 D
3 = MW: 826 D



Column:
Reprosil 200 SEC, 5 μ m (300 x 8 mm)
Flow: 1 ml / min
Eluent:
50 mM KH₂PO₄ + 150 mM KCL, pH 7.0
Sample:

1 =T hyroglobulin (MW - 670 KD)
2 = Ovalbumin (MW - 44 KD)
3 = Myoglobin (MW - 17 KD)
4 = Phenylalanine



Column:
Reprosil SEC 4000, 5 μ m
A.) 250 x 4.6 mm, Flow: 1 ml / min
B.) 750 x 4.6 mm, Flow: 0,33 ml / min
Eluent:
50 mM KH₂PO₄ + 150 mM KCL, pH 7.0
Sample:
1 = Thyroglobulin (MW - 670 KD)
2 = Ovalbumin (MW - 44 KD)
3 = Phenylalanine

GPC - Gel Permeation Chromatography

ReproGel PS GPC columns are packed with *Polystyrol/Divinylbenzene Copolymer* packings with 3, 5 or 10 μm particles.

Typical theoretical plate numbers/m are :

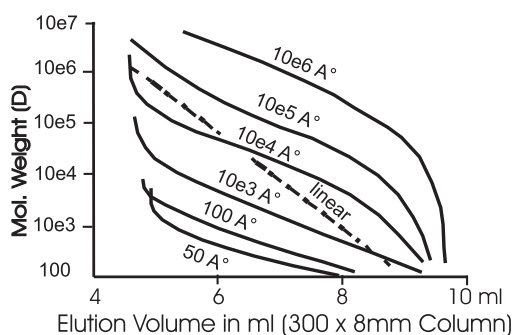
for 3 μm : 110 000/m, for 5 μm : 70 000/m and for 10 μm : 50 000/m.

The particles are totally spherical and pressure stable up to 1160 bars.

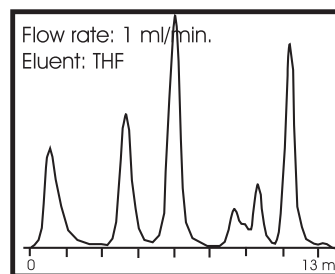
Column dimensions are: 300 x 8 resp. 600 x 8 mm and 30 x 8 mm for guards.

The optimal flow rate is 1 ml/min.

Calibration Curves of Repro-Gel-PS-GPC



Separation of Polystyrols



Column: ReproGel-GPC-PS linear

ReproGel PS-GPC Columns:

Pore size	Daltons		Exclusion Limit	Mat.No.:
50 A°	<	1 000	3 000	(050.)
100 A°	>	3 000	5 000	(100.)
500 A°	>	20 000	20 000	(500.)
10 ³ A°	1 000 -	40 000	70 000	(103.)
10 ⁴ A°	4 000 -	500 000	700 000	(104.)
10 ⁵ A°	10 000 -	2 000 000	4 000 000	(105.)
10 ⁶ A°	200 000 -	10 000 000	> 10 000 000	(106.)
Linear	1 000 -	1 000 000	> 2 000 000	(lin.)

Eluents:

Benzene, Chlorierte Aliphate, Chinolin, Cyclohexan, o-Dichlorbenzol, Dimethylformamid, Dimethylacetamid, Dimethylsulfoxid, Dioxan, Ethylacetate, Hexafluorisopropanol, HFIP/CHCl₃, m-Kresol, Methylethylketon, N-Methylpyrolidinon, Tetrahydrofuran, Toluene, Trichlorbenzol, Xylol

Ordering numbers: Particle size + Mat. No. (=Porosity) + Column (New=s, Refill=r) + Dimensions

example a): 5 μm and 100 A° and new column 300 x 8 mm

order no.: Rg5.100.s3008

example b): 10 μm and 10³ A° and Refill 300 x 8 mm

order no.: Rg0.103.r3008

example c): 3 μm and 50 A° and new Column 600 x 8 mm

order no.: Rg3.050.s6008

USP-List (Dr. Maisch HPLC-Phases):

Code	Spezifikation	Dr. Maisch Phases
USP-L1	Octadecyl silane / C18, RP18, ODS) chemically bonded to porous or ceramic silica microparticles, 1.8 until 10 µm	Reprosil 100 C18 (XBD) Reprosil-Pur C18-AQ Reprosil-Pur ODS-3 Reprosil Gold C18 Reprosil Saphir C18 Reprosil 80 ODS-2 Reprosil-Pur Basic C18 (HD) Reprospher C18 (DE) Equisil ODS Equisil BDS C18 Reprobond C18 Repropack C18
USP-L3	Porous silica microparticles 5-10 µm	Reprosil 100 Si Reprosil-Pur Si Reprosil 80 Si Reprospher Si Equisil 120 Si
USP-L7	Octyl silane (C8, RP8, MOS) chemically bonded to totally porous silica particles, 1.8 – 10 µm	Reprosil 100 C8 Reprosil-Pur C8 Reprosil Gold C8 Reprosil -Pur Basic C8 (HD) Reprosil 80 C8 Reprospher C8 (DE) Equisil BDS C8
USP-L8	An essentially monomolecular layer of aminopropylsilane (NH ₂ , APS)) chemically bonded to totally porous silica gel support, 3-10 µm	Reprosil 100 NH ₂ Reprosil-Pur NH ₂ Reprosil 80 NH ₂ Reprospher NH ₂ Equisil APS
USP-L9	Irregular or spherical, totallyporous silica gel having a chemically bonded, strongly acidic cation-exchange coating (SCX)	Reprosil 80 SCX Reprosil Saphir SCX
USP-L10	Nitrile groups (CN) chemically bonded to porous silica particles 3-10 µm	Reprosil 100 CN Reprosil-Pur CN Reprosil 80 CN Reprospher CN (DE) Equisil CPS
USP-L11	Phenyl groups chemically bonded to porous silica particles, 3-10 µm	Reprosil 100 Phenyl Reprosil-Pur Phenyl Reprosil 80 Phenyl Reprospher Phenyl (DE) Equisil Phenyl
USP-L13	Trimethylsilane (C1, SAS)) chemically bonded to porous silica particles 3-10 µm	Reprosil-Pur C1 Reprosil 80 C1 Equisil SAS
USP-L14	Silica gel having chemically bonded, strongly basic quaternary ammonium-anion exchange coating, 5-10 µm	Reprosil 80 SAX
USP-L15	Hexyl silane (C6, Hexyl) chemically bonded to totally porous silica, 3-10 µm	Reprosil 80 C6

USP-L16	Dimethyl silane (C2) chemically bonded to porous silica particles, 3-10 µm	Reprosil Gold 120 C2 Reprosil Gold 300 C2
USP-L17	Strong cation-exchange resin consisting of sulfonated cross-linked styrene-divinylbenzene copolymer in the H ⁺ Form, 7-11 µm	Reprogel H ⁺ , 9 µm
USP-L18	Amino and cyano groups chemically bonded to porous silica particles, 3-10 µm	Reprosil PAC
USP-L19	Strong cation-exchange resin consisting of sulfonated cross-linked styrene-divinylbenzene copolymer in the calcium, 9 µm	Reprogel Ca ⁺⁺
USP-L20	Dihydroxypropane (OD, Diol) groups chemically bonded to porous silica particles, 5-10 µm	Reprosil 100 Diol Reprosil-Pur Diol Reprosil 80 Diol
USP-L21	A rigid, spherical styrene-divinylbenzene-copolymer, 5-10 µm	Repromer 100 RPS Repromer 300 RPS Repromer 1000 RPS
USP-L22	A cation-exchange resin made of porous polystyrene gel with sulfonic acid groups, about 10 µm in size	Reprogel SCX
USP-L26	Butyl silane (C4) chemically bonded to totally porous silica particles, 5-10 µm	Reprosil 100 C4 Reprosil-Pur C4 Reprosil Gold C4 Reprospher C4 (DE)
USP-L32	A chiral ligand-exchange packing L-Proline copper complex covalently bonded to irregularly shaped silica, particles, 5-10 µm	Reprosil Chiral-L-Prolin
USP-L34	Strong cation-exchange resin consisting of sulfonated cross-linked styrene-divinylbenzene copolymer in the lead form, 9 µm	Reprogel Pb, 9 µm
USP-L37	Polymethacrylate gel packing having the capacity to separate proteins by molecular size over a range of 2 000 – 40 000D	Repromer OH-60, 10 µm
USP-L38	Methacrylate based size exclusion packing for water soluble samples	Repromer OH, 10 µm
USP-L40	Cellulose tris-3,5-dimethylphenylcarbamate coated porous silica particles, 5-20 µm	Reprosil Chiral-OM
USP-L41	Immobilized alfa-1-acid glycoprotein on spherical silica particles, 5 µm	Chiral-AGP
USP-L43	Pentafluorophenyl groups chemically bonded to silica particles, 5 -10 µm	Reprosil Fluosil PFP
USP-L47	High capacity anion-exchange microporous substrate, fully, Functionalized with trimethylamine groups, 8 µm	PRPX-110 RCX-10 RCX-30
USP-L51	Amylose-tris-3,5-dimethylphenylcarbamate coated, porous, spherical silica particles, 5-10 µm	Reprosil Chiral-AM
USP-L58	Strong cation-exchange resin consisting of sulfonated cross linked copolymer in the Na ⁺ Form, 7-11 µm	Reprogel Na ⁺
USP-L60	Spherical, porous silica gel, surface has been covalently modified with alkylamid-groups with endcapping	Reprosil ABZ-Amid C18
USP-L62	C30-silane bonded phase on a fully spherically silica, 3-15 µm	Stability C30

References for HPLC-columns from Dr. Maisch GmbH

ReproSil 100 C18, 3 m, 250 x 1 mm

Characterisation of human circulating TIG2 as a ligand for the orphan receptor ChemR23.
Meder, W. et al.; FEBS Letters, 555 (2003) 495-499.

ReproSil-Pur 120 C18-AQ, 5 m, 250 x 4.5 mm

Effects of astaxanthin-rich algal meal (*Haematococcus pluvalis*) on growth performance, caecal camphylobacter and clostridial counts and tissue astaxanthin concentration of broiler chickens.

Waldenstedt, L. et al.; Animal Feed Science and Technology, 108 (2003) 119-132.

Reprosil 100 C18, 3 m, 250 x 1 mm

Human hemoglobin-derived peptides exhibit antimicrobial activity: a class of host defense peptides.

Liepke, C. et al.; Journal of Chromatography B, 791 (2003) 345-356.

ReproSil 300 C18, 5 m, 150 x 1mm

Molecular cloning and expression of structural domains of bothropasin, a P-III metalloproteinase from the venom of *Bothrops jararaca*.

Assakura, M.T. et al.; Toxicon, 41 (2003) 217-227.

ReproSil-Pur 120 C4, 5 m, 150 x 2 mm

Peripheral and central antihyperalgesic effects of diclofenac in a model of human inflammatory pain.

Burian, M. et al.; Clinical Pharmacology & Therapeutics, 74 (2003) 113.

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12891221&dopt=Abstract

Reprosil-Pur 120 ODS-3, 5 m, 250 x 1.5 mm

Cisplatin tumor concentrations after intra-arterial cisplatin infusion or embolization in patients with oral cancer.

Tegeeder, I. et al.; Clinical Pharmacology & Therapeutics, 73 (2003) 417.

ReproSil-Pur 120 C18-AQ, 5 m, 150 x 3 mm

2-(p-Hydroxybenzyl)indoles - side products formed upon cleavage of indole derivatives from carboxylated wang polymer.

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ReproSil-Pur 120 ODS-3, 5 m, 250 x 3mm

Analysis of pentacyclic triterpenic acids from frankincense gum resins and related phytopharmaceuticals by high-performance liquid chromatography. Identification of lupeolic acid, a novel pentacyclic triterpene.

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ReproSil-Pur 120 ODS-3, 5 m, 250 x 3mm

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Büchele, B. et al; Journal of Chromatography B, 795 (2003) 355-362.

ReproSil-Pur 120 RP18-NE, 5 m, 250 x 4 mm

Biosynthesis of the dimeric ellagitannin, cornusiin E, in *Tellima grandiflora*.

Niemetz, R. et al.; Phytochemistry, 64 (2003) 109-114.

ReproSil-Pur 120 C18-AQ, 3 m, 250 x 1mm

Angiotensin II receptor – Independent anti-inflammatory and antiaggregatory properties of Losartan – Role of the active metabolite EXP3179

Krämer, Chr., et al.; Circulation Research, 90 (2002) 770.

<http://circres.ahajournals.org/cgi/reprint/90/7/770.pdf>

ReproSil-Pur 120 C18-AQ, 5 m, 125 x 2mm

Quantification of sirolimus by liquid chromatography – tandem mass spectrometry using on-line solid-phase extraction.

Vogesser, M. et al.; Clinical Chemistry and Laboratory Medicine, 40 (2002) 40.

http://www.degruyter.de/journals/cclm/pdf/401_40.pdf

ReproSil-Pur 200 ODS-3, 5 m, 150 x 3 mm

Sensitivity of larval and adult crickets (*Gryllus bimaculatus*) to adipokinetic hormone.

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ReproSil-Pur 120 ODS-3, 3 m, 125 x 4 mm

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Müller, Jörg; Dissertation, LMU München, 2002.

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ReproSil-Pur 120 ODS-3, 3 μ m, 150 x 4 mm
Ethanol administration potentiates cocaine-induced dopamine levels in the rat nucleus accumbens.
Lindholm, S. et al.; Brain Research, 915 (2001) 176-184.

ReproSil-Pur 120 C18-AQ, 10 μ m, 250 x 1.5mm
A comparative study on hypertrehalosaemic hormones in the Hymenoptera: sequence determination, physiological actions and biological significance.
Lorenz, M.W. et al.; Journal of Insect Physiology, 47 (2001) 563-571.

Stability 100 C30, 5 μ m, 250 x 4.6mm
Bioverfügbarkeit von Carotinoiden und deren Metabolisierung in Serum und Retina, Anwendung von HPLC-NMR- und HPLC-APCI-MS-Kopplung.
Glaser, Tobias; Dissertation, München, 2001.
http://w210.ub.uni-tuebingen.de/dbt/volltexte/2001/439/pdf/Dissertation_tg.pdf

Reprosil 300 C18, 5 μ m, 150 x 1 mm
The ricinosomes of senescing plant tissue bud from the endoplasmic reticulum.
Schmid, M. et al.; Proceedings of the National Academy of Sciences, 98 (2001) 5353-5358.
<http://www.pnas.org/cgi/reprint/98/9/5353.pdf>

BS-C23, 5 μ m, 250 x 0.1mm und 250 x 0.05mm
Application of hydrophobic anion-exchange phases in capillary electrochromatography.
Scherer, B. et al.; Journal of Chromatography A, 924 (2001) 197-209.

ReproSil-Pur 120 ODS-3, 3 μ m, 150 x 4 mm
Ethanol administration potentiates cocaine-induced dopamine levels in the rat nucleus accumbens.
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ReproSil-Pur 120 C18-AQ, 3 μ m, 250 x 0.1mm
Processed human chemokines PHC-1 and PHC-2.
Detheux, M. et al.; Europäisches Patentamt, EP 1167527A9 (2000) p.8.
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Reprosil-Pur 120 C18-AQ, 10 μ m, 250 x 40mm
Einfluss der Verarbeitungstechnik auf die Polyphenole und antioxidative Kapazität von Apfel und Beerenobstsäften.
Rechner, Andreas; Dissertation, Giessen, 2000.
<http://bibd.uni-giessen.de/ghm/2001/uni/d010023.htm>

ReproSil-Pur 120 C18-AQ, 5 μ m, 250 x 4.6mm
Interaction between Manduca sexta allatotropin and Manduca sexta allatostatin in the fall armyworm Spodoptera frugiperda.
Oeh, U. et al.; Insect Biochemistry and Molecular Biology, 30 (2000) 719-727.

ReproSil-Pur 120 C18-AQ, 5 μ m, 250 x 1.5mm
Structure elucidation and biological activity of an unusual adipokinetic hormone from corpora cardiaca of the butterfly, *Vanessa cardui*.
Köllisch, G.V. et al.; European Journal of Biochemistry, 267 (2000) 5502.
<http://www.ejbiochem.org/cgi/reprint/267/17/5502.pdf>

ReproSil-Pur 120 ODS-3, 5 μ m, 150 x 4.6 mm
Development of a method for sample preparation for subsequent identification and measurement of 1,2,3,4-tetrahydroisoquinolines and other potentially neurotoxic compounds by high-performance liquid chromatography with ultraviolet and fluorescence detection in blood plasma of Parkinson's disease patients.
Pagel, P. et al.; Journal of Chromatography B, 746 (2000) 283-295.
http://www.uni-ulm.de/toxikologie/Publikationen/Park_HPLC_JCB283.pdf

ReproSil-Pur 120 ODS-3, 5 μ m, 250 x 2mm
Structural and phylogenetic characterization of human SLURP-1, the first secreted mammalian member of the Ly-6/uPAR protein superfamily.
Adermann, K. et al.; Protein Science (1999), 8:810-819.
<http://www.proteinscience.org/cgi/content/abstract/8/4/810>

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Variability in the ratio of mutant to wildtype myosin heavy chain present in the soleus muscle of patients with familial hypertrophic cardiomyopathy. A new approach for the quantification of mutant to wildtype protein.
Nier, V. et al.; FEBS Letters, 461 (1999) 246-252.
<http://www.elsevier.com/febs/47/13/34/tx1.pdf>

Hexagons, a simple and fast method to compare different HPLC-phases,
 Conditions: With aromatic compounds and MeOH / water as eluents.

<p>Bondapak</p> <p>3/4 N-An Propbenz/Metbenz Fluoren/Fluorenol Triph/O-Ter EBT</p>	<p>Gromsil AB</p> <p>3/4 N-An Propbenz/Metbenz Fluoren/Fluorenol Triph/O-Ter EBT</p>	<p>Inertsil ODS 2</p> <p>3/4 N-An Propbenz/Metbenz Fluoren/Fluorenol Triph/O-Ter EBT</p>	<p>LiChrospher</p> <p>3/4 N-An Propbenz/Metbenz Fluoren/Fluorenol Triph/O-Ter EBT</p>
<p>Discovery Amid C16*</p> <p>3/4 N-An Propbenz/Metbenz Fluoren/Fluorenol Triph/O-Ter EBT</p>	<p>Gromsil CP</p> <p>3/4 N-An Propbenz/Metbenz Fluoren/Fluorenol Triph/O-Ter EBT</p>	<p>Inertsil ODS 3</p> <p>3/4 N-An Propbenz/Metbenz Fluoren/Fluorenol Triph/O-Ter EBT</p>	<p>LiChrospher Select B</p> <p>3/4 N-An Propbenz/Metbenz Fluoren/Fluorenol Triph/O-Ter EBT</p>
<p>Discovery C18</p> <p>3/4 N-An Propbenz/Metbenz Fluoren/Fluorenol Triph/O-Ter EBT</p>	<p>Hypersil BDS</p> <p>3/4 N-An Propbenz/Metbenz Fluoren/Fluorenol Triph/O-Ter EBT</p>	<p>Jupiter</p> <p>3/4 N-An Propbenz/Metbenz Fluoren/Fluorenol Triph/O-Ter EBT</p>	<p>Luna</p> <p>3/4 N-An Propbenz/Metbenz Fluoren/Fluorenol Triph/O-Ter EBT</p>
<p>Fluofix IEW*</p> <p>3/4 N-An Propbenz/Metbenz Fluoren/Fluorenol Triph/O-Ter EBT</p>	<p>Hypersil Hy Purity Elite</p> <p>3/4 N-An Propbenz/Metbenz Fluoren/Fluorenol Triph/O-Ter EBT</p>	<p>Kromasil</p> <p>3/4 N-An Propbenz/Metbenz Fluoren/Fluorenol Triph/O-Ter EBT</p>	<p>MP-Gel</p> <p>3/4 N-An Propbenz/Metbenz Fluoren/Fluorenol Triph/O-Ter EBT</p>
<p>Fluofix INW*</p> <p>3/4 N-An Propbenz/Metbenz Fluoren/Fluorenol Triph/O-Ter EBT</p>	<p>Hypersil ODS</p> <p>3/4 N-An Propbenz/Metbenz Fluoren/Fluorenol Triph/O-Ter EBT</p>	<p>LiChrosorb</p> <p>3/4 N-An Propbenz/Metbenz Fluoren/Fluorenol Triph/O-Ter EBT</p>	<p>Nova-Pak</p> <p>3/4 N-An Propbenz/Metbenz Fluoren/Fluorenol Triph/O-Ter EBT</p>

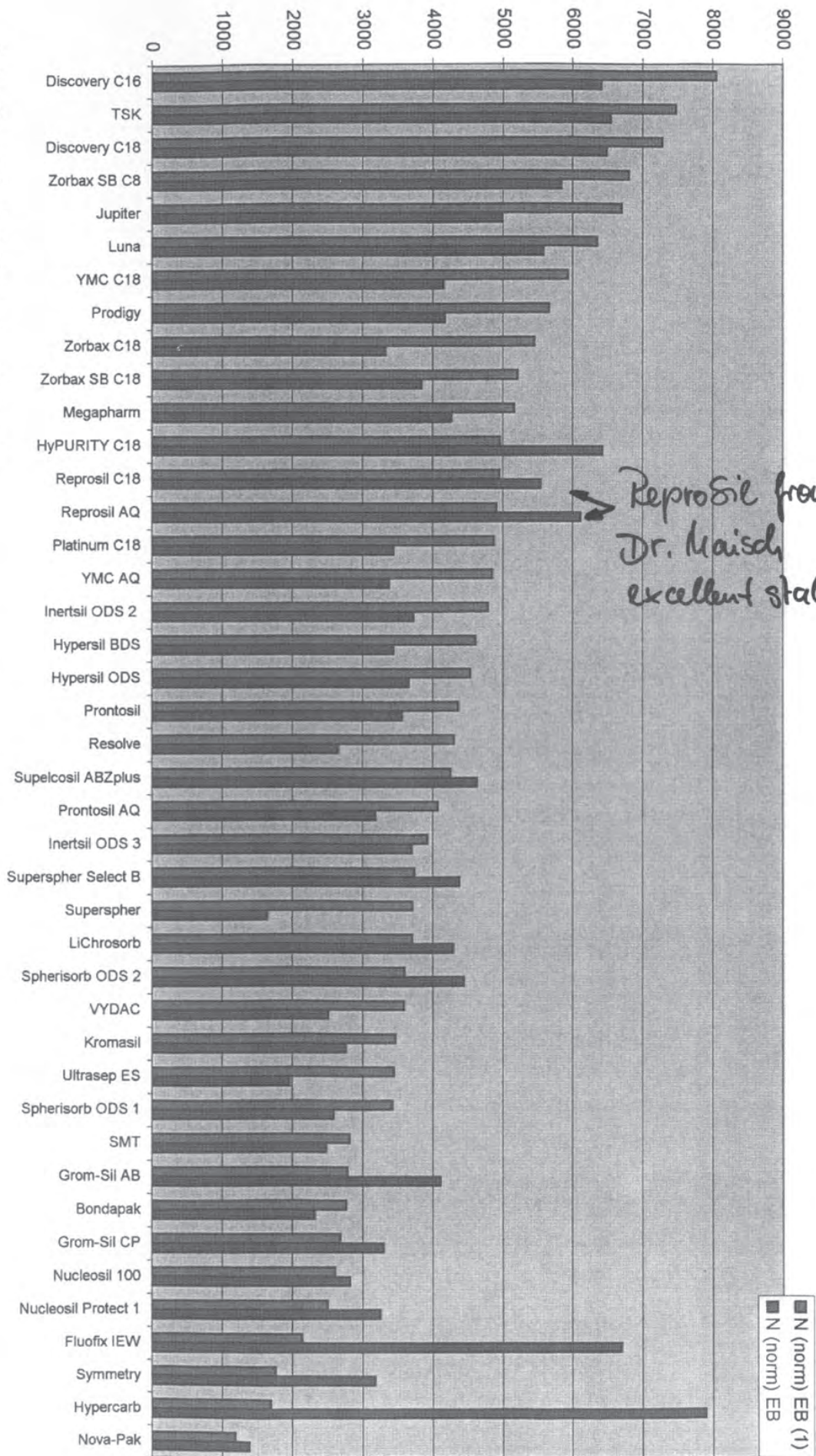
The rule is: Similar hexagonal diagrams indicate similar phases
 (From independent study by Dr. S. Kromidas, see page 35)

Hexagons, a simple and fast method to compare different HPLC-phases.

Conditions: With aromatic compounds and MeOH / water as eluents.

<p>Platinum C18</p>	<p>Purospher</p>	<p>Spherisorb ODS 1</p>	<p>Symmetry C18</p>	<p>YMC Pro C18</p>
<p>Platinum EPS</p>	<p>Repro-Sil AQ</p>	<p>Spherisorb ODS 2</p>	<p>Toso Haas TSK</p>	<p>Zorbax ODS</p>
<p>Prodigy</p>	<p>Repro-Sil ODS 3</p>	<p>SupelcoSil ABZ plus*</p>	<p>Ultrasep ES</p>	<p>Zorbax SB C18</p>
<p>ProntoSil AQ</p>	<p>Resolve</p>	<p>Superspher</p>	<p>VYDAC</p>	<p>Zorbax SB C8</p>
<p>ProntoSil C18</p>	<p>SMT OD C18</p>	<p>Superspher Select B</p>	<p>YMC ODS AQ</p>	

The rule is: Similar hexagonal diagrams indicate similar phases
(From independent study by Dr. S. Kromidas, see page 35)



Reprosil from Dr. Maisch excellent stability!

Grey: Theoretical plate number N at start
 Black: Theoretical plate number N after 2 months permanent analysis

The theoretical plate number N of the majority of tested columns decreases after 2 months of permanent analysis, but not so with Reprosil and Fluofix (Neos) columns from Dr. Maisch GmbH

From independent study by Dr. S. Kromidas:
 "Eigenschaften von kommerziellen HPLC-Phasen im Vergleich"
 (Comparison of qualities of commercial HPLC-Phases)
 Published by V. Pirrot, Saarbrücken, 2002