Dr. Maisch

Columns made in Germany

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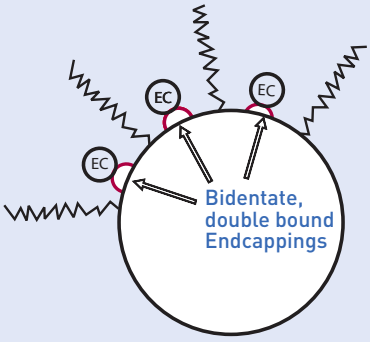
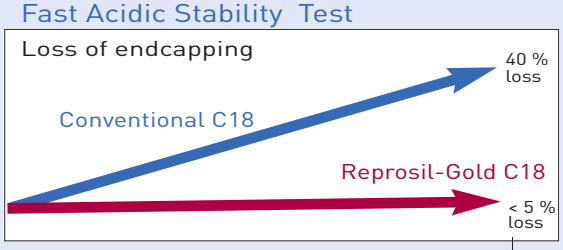
The new bidentate HPLC Phases: Reprosil-Gold and Reprosil-Pur Basic

For Features of other Dr. Maisch HPLC-Phases such as **Reprosil, Equisil, Reprospher, Stability, Fluosil, Reprosil Chiral, Gold-Turbo, Reprogel** see **www.reprosil.com**

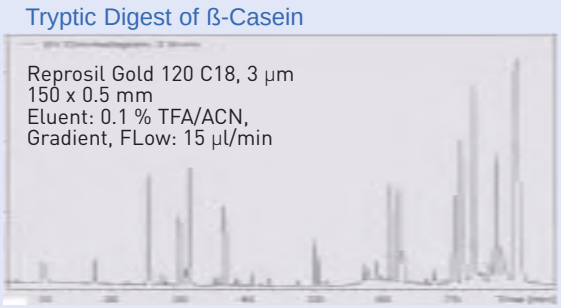


Bidentate = Double stability

More resistance to acidic and basic mobile phases

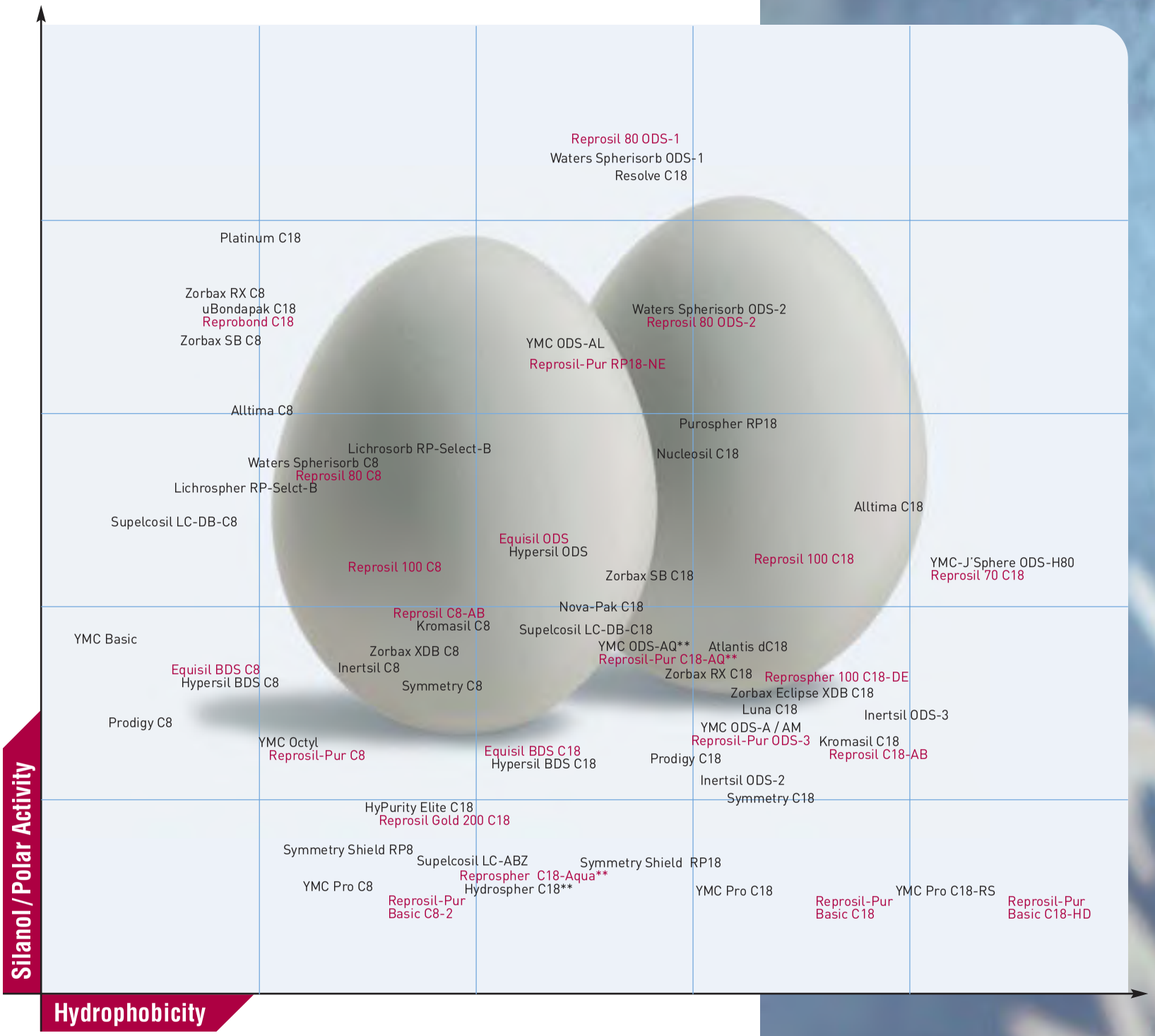


Column:150x 4 mm
Flow: 0.7 ml/min Eluent: ACN / TFA (pH1) (1/9)
Temperature: 75 C °



Features of Reprosil Gold and Reprosil-Pur Basic, the High-Purity Phases (99.999%)

Phase:	Pores	S.A. (m^2/g)	% Carbon	Particle sizes	Mat.No.:
Reprosil-Pur Basic C18	100 A°	450	17%	1.8, 2, 3, 5, 10	r1x.b9
Reprosil-Pur Basic C18-HD	100 A°	450	25%	3, 5, 10	r1x.b9h
Reprosil-Pur Basic C8	100 A°	450	15%	3, 5, 10	r1x.b8
Reprosil-Pur Basic C8-2	100 A°	450	12%	3, 5, 10	r1x.b82
Reprosil Gold C18	120 A°	320	20%	3, 5, 10	r1x.9g
Reprosil Gold 200 C18	200 A°	180	14%	5, 10	r2x.9g
Reprosil Gold 300 C18	300 A°	120	8%	5, 10	r3x.9g
Reprosil Gold C8	120 A°	320	12%	3, 5, 10	r1x.8g
Reprosil Gold 200 C8	200 A°	180	8%	5, 10	r2x.8g
Reprosil Gold 300 C8	300 A°	120	5%	5, 10	r3x.8g
Reprosil Gold C4	120 A°	320	8%	3, 5, 10	r1x.4g
Reprosil Gold 200 C4	200 A°	180	5%	5, 10	r2x.4g
Reprosil Gold 300 C4	300 A°	120	3%	5, 10	r3x.4g



Phase Selection Guide*

Red: Dr. Maisch-phases.

Phases in the **upper part of the chart** are polar RP-phases, which are based on lower purity silicas or/and are not endcapped.

For bases please select phases in the **lower part of the chart**.

If you are looking for a similar phase from a different supplier, please look in the same area of the chart.

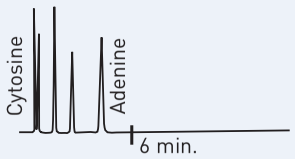
* Based on YMC Phase Selection Guide and Waters Selectivity Chart (1999)

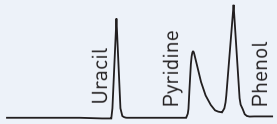
If poor separation in early part of chromatogram*

If tailing with basic analytes or poor separation

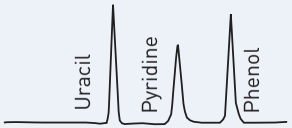
"Hydrophilic" Phase:	Standard Phase:	Highly Base deactivated Phase:
Polar-Selectivity → Carbon content, Hydrophobicity, pH-Stability, Base Deactivation		
Reprospher C18-Aqua (12 % C)	Reprospher C18 (16 % C)	Reprospher C18-DE (16 % C) Reprosil-Pur Basic C18 (17 % C) Reprosil Gold C18 (20 % C) Reprosil-Pur Basic C18-HD (25 % C)
Reprospher C18-Aqua (12 % C) Reprosil-Pur RP-18-NE (14 % C) Reprosil -Pur C18-AQ** (15 % C)	Reprosil 100 C18 (15 % C, medium purity)	Reprospher C18 (16 % C)
Reprosil-Pur RP-18 NE (14 % C) Reprospher C18-Aqua (12 % C)	Reprosil-Pur C18-AQ** (15 % C)	Reprosil-Pur ODS-3 (17 % C)
	Reprosil-Pur Basic C18 (17 % C)	Reprosil-Pur Basic C18-HD (25 % C) Reprosil Gold C18 (20 % C)
Reprosil 80 ODS-1 (partially endcapped, 7 % C)	Reprosil 80 ODS-2 (12 % C)	
	Equisil ODS (10 % C)	Equisil BDS C18 (11 % C)
Gold-Turbo 100 C18-EPS (with polar Diol-groups, 12 % C)	Gold-Turbo (Basic) C18 (UltraFast) (16 % C)	Gold-Turbo XBD C18 (16 % C)

poor early separation





Tailing with Pyridine and poor separation



Dr. Maisch Column Selection Guide

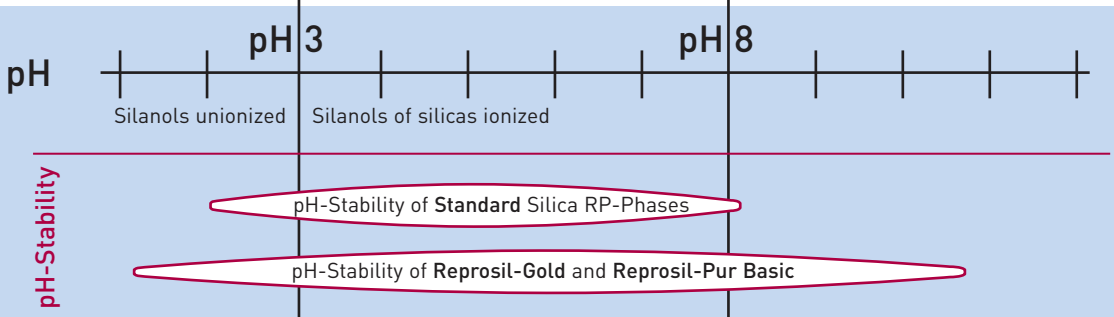
Red = High purity, so called Type B silicas. High purity phases show lower silanol activity.
* With Bases you can go the opposite way, if you take a basic pH and pH-stable phase like Reprosil-Gold or Basic C18-HD, or if you take ion pairings.
** Show also hydrophilic selectivity with high water content in the eluent. **Reprosil-Pur RP18-NE**= Not Endcapped C18 Phase. **Reprospher C18-Aqua**= C18/Diol phase. **Reprosil Gold / Basic** =very stable RP-Phases with double bound, bidentate, endcappings. **Reprospher C18-DE**= C18 phase with double, 2 step, endcapping. **XBD**= eXtra Base Deactivated Phase, **EPS**=Enhanced Polar Selectivity, **Gold-Turbo**= 1.5 µm, 1.8 µm and 2 µm Phases.

Phases in the same line are from the same silica type.

The stable columns:

Reprosil-Gold and Reprosil-Pur Basic

Range A (Acidic)	Range C (Critical)	Range B (Basic)
Best start approach for Method Development with Bases and Acids	Critical control of pH necessary for good reproducibility	Important range for bases. Increased Retention and Resolution of Bases such as Lorazepam at pH 10,5 (EUPOEIA)



	Range A (Acidic)	Range C (Critical)	Range B (Basic)
Recommended Columns	Reprosil-Pur Basic C18 (HD), Reprosil Gold	Reprosil-Pur Basic C18 (HD), Reprosil Gold, Reprosil 100, Reprosil 80, Equisil, Reprospher, Reprosil-Pur	Reprosil-Pur Basic C18 (HD), Reprosil Gold
Recommended buffers (10-50 mM)			
Phosphate	(1.2–3.2)	(6.2–8.2)	(11.3–13.3)
Formiate*	(2.8–4.8)		Basic Phosphate-buffers (pH > 7 + T > 40 ° C) decrease column lifetime
Acetate*		(3.8–5.8)	
TFA* (0,1% = pH 2.2)			
Citrate		(2.1–6.4)	
Tris		(7.1–9.1)	
Ammonium Hydroxid*			(8.2–10.2)
Ammonium Acetate*		(3.8–5.8)	(8.2–10.2)
Borate			(8.3–10.3)
Triethylamine*			(9.7–11.7)
Pyrrolidine (best for Range B)			(10.3–12.3)
* Volatile buffers for LC/MS			
Recommended Organic Modifiers	ACN, MeOH, THF	ACN, MeOH, THF	MeOH is prefered
Recommended temperature	up to 60 ° C	up to 60 ° C (up to 40 ° C with phosphate buffers)	up to 40 ° C

TO MAXIMISE COLUMN LIFETIME, PLEASE AVOID:

- **In Range B**: High temperatures and Phosphate buffers, over pH 10 avoid phosphate buffers totally
- Organics other than MeOH in high Range B
- High salt concentrations over 50 mM
- Immiscible solvents
- Several days old buffers
- During storage: High Temperature, buffer in column, high water content, (Best pure ACN or MeoH)
- **In Range B and low Range A:** Other columns than Reprosil Gold or Reprosil-Pur Basic