Dr. Maisch

Any Column, Any Size, Any Media

ReproSil pHoenix

极限PH条件下的优质选择

MADE BY DR. MAISCH

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- P 5 - 极端pH值对二氧化硅基介质的影响
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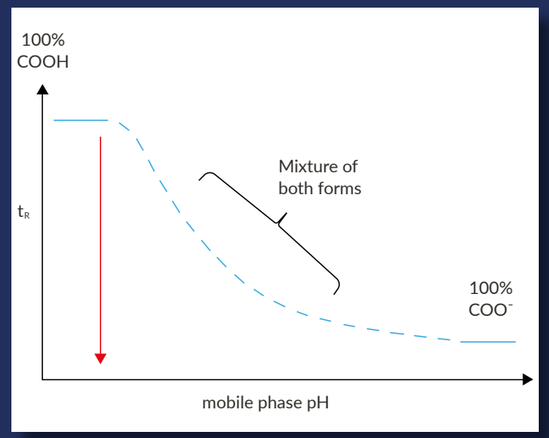
ReproSil pHoenix
MADE BY DR. MAISCH

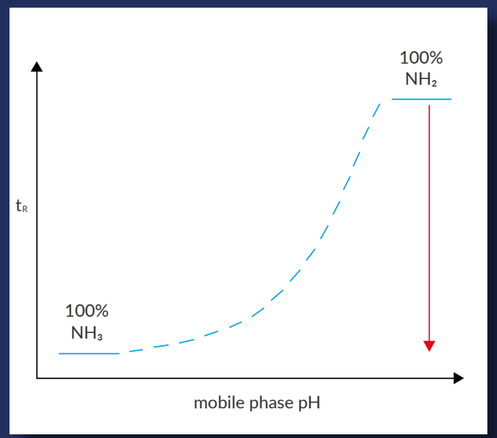
来自欧洲最大的高效液相色谱（HPLC）柱制造商之一。

为什么需要在极端pH下进行色谱分析？



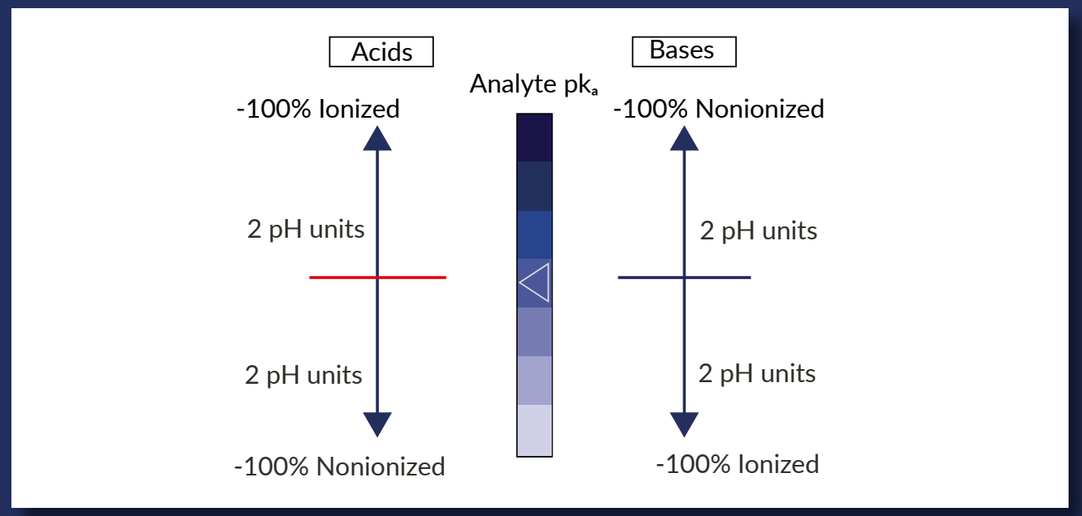
$RCOOH \leftrightharpoons RCOO^- + H^+$

酸在低**pH**下能保持最佳峰形



$RNH_2 \leftrightharpoons RNH_3^+ + OH^-$

碱在高**pH**下能保持最佳峰形

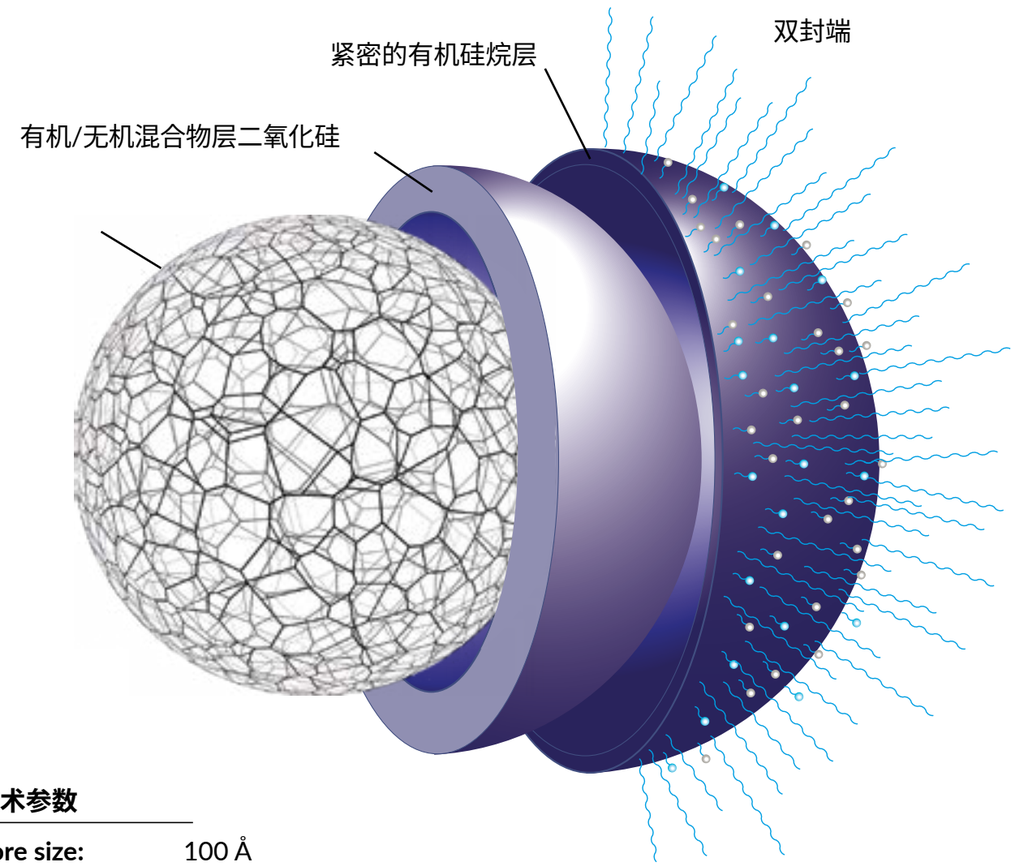


极端pH值对二氧化硅介质的影响

High pH:	**Low pH:**
导致硅胶架构的水解	导致键合相和封端的水解
→严重的峰值失真	→保留时间发生变化
→丢失柱效	→碱性化合物的峰拖尾

提高PH稳定性

新型有机无机杂化和双封端技术



技术参数

Pore size:	100 Å
Particle size:	1.9 µm, 3 µm, 5 µm, 7 µm, 10 µm
Surface area:	470 m²/g
Modification:	C18
Carbon content:	22%
Endcapping:	yes

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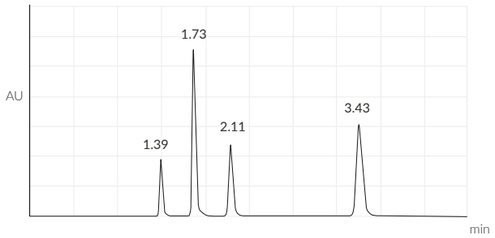
极端PH条件下的稳定性

NaOH(aq) pH 12条件下连续运行400个小时

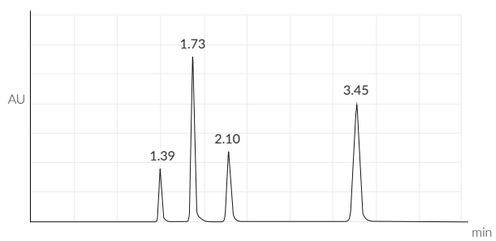
Test conditions:

Mobile phase: MeOH/H_2O 85/15
Flow rate: 1 ml/min
Detector: UV @ 254 nm

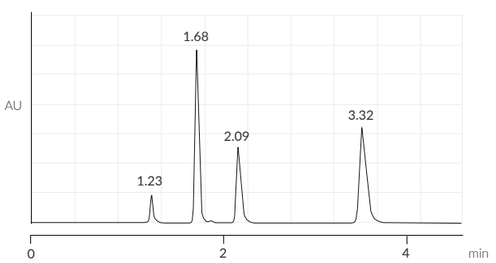
Name:	Conc. mg / mL
1 Uracil	0.015
2 Phenol	0.700
3 N,N-Diethyl-M-Toluamide	0.600
4 Toluene	4.000



0 hours



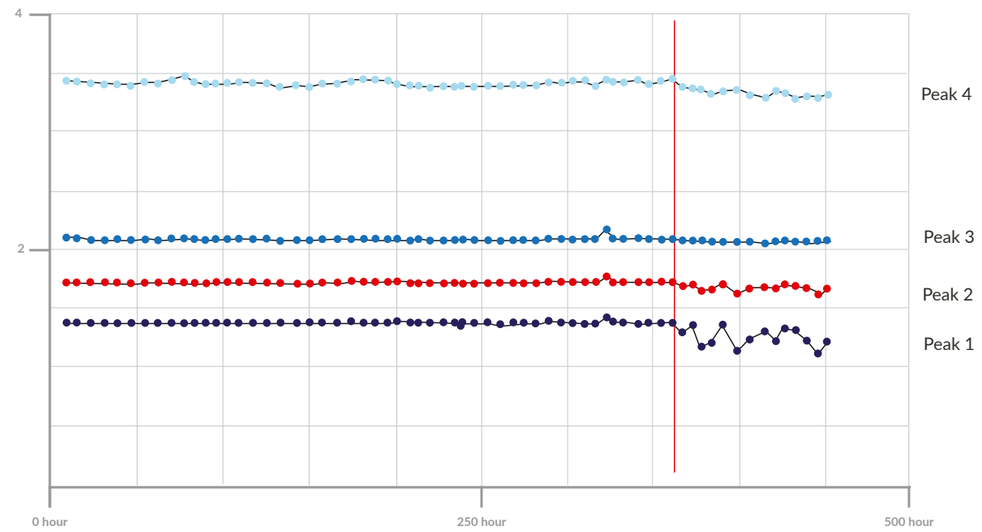
210 hours



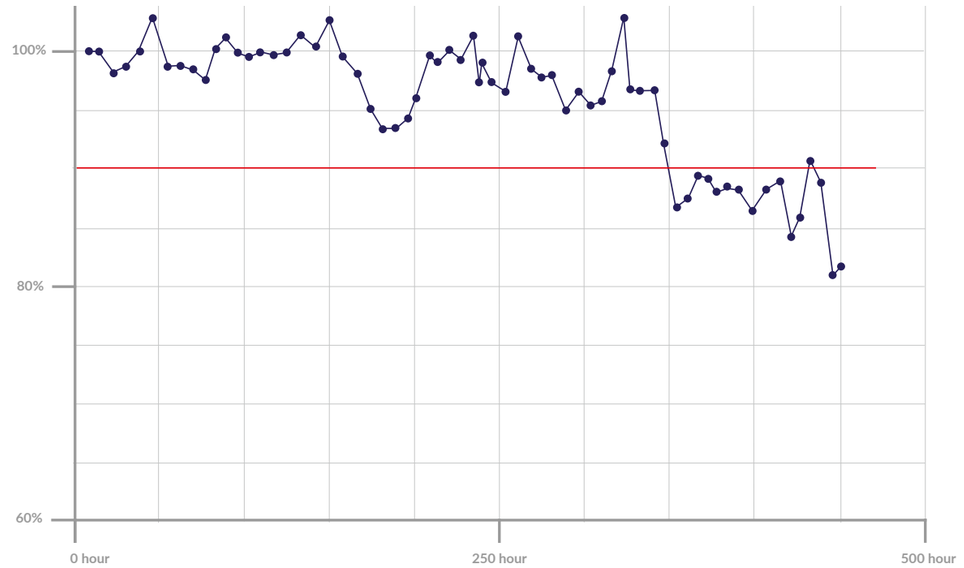
400 hours

极端PH条件下的稳定性

NaOH(aq) pH为12时的峰值保留与洗脱时间的关系



Th. plates (Peak 4) % vs. purging time

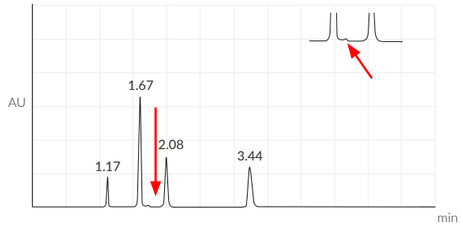


PH12条件下的选择性对比

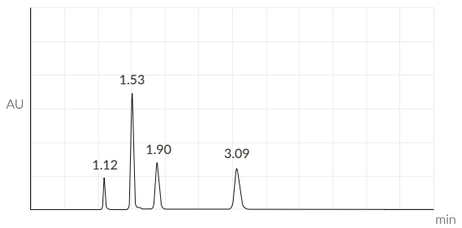
在 ReproSil pHoenix上的 “ 杂质 ” 保留

Mobile phase: MeOH/NH_3-resolution (pH 12) 85/15
Flow rate: 1 ml/min
Detector: UV @ 254 nm

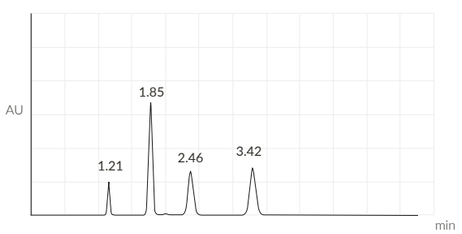
Name:	Conc. mg / mL
1 Uracil	0.015
2 Phenol	0.700
3 N,N-Diethyl-M-Toluamide	0.600
4 Toluene	4.000



ReproSil pHoenix

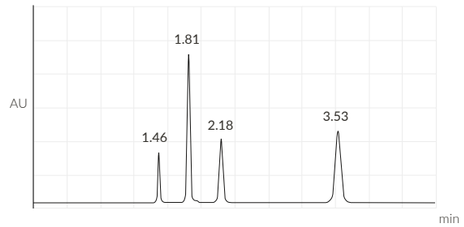


Kromasil Eternity

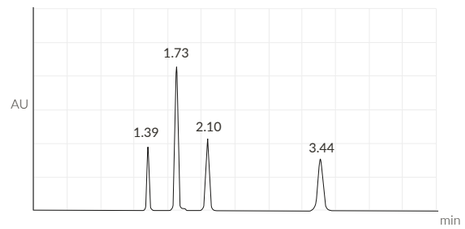


YMC Triart

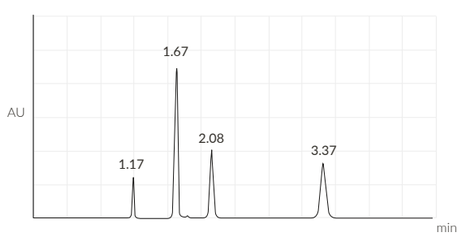
各种PH条件下的选择性对比



ReproSil pHoenix, pH 7



ReproSil pHoenix, pH 3

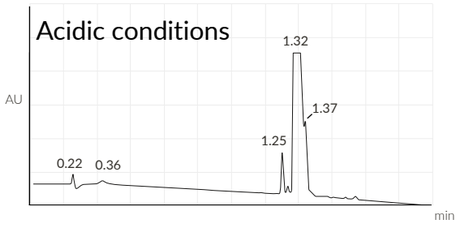


ReproSil pHoenix, pH 12

碱性和酸性洗脱条件下的选择性和峰形

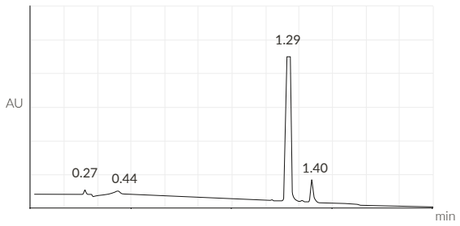
Observe superior selectivity / resolution of ReproSil pHoenix vs. Waters Acquity

数据由Nuvisan ICB GmbH提供



Waters Acquity

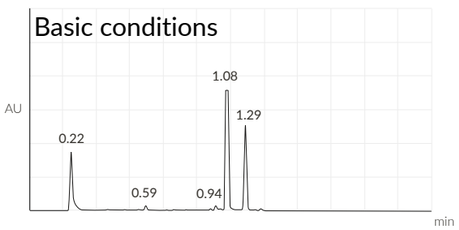
Column: Acquity UPLC BEH C18 1.7 µm, 50x2.1mm;
Eluent A: water + 0.1 vol% formic acid;
Eluent B: acetonitrile;
Gradient: 0-1.6 min 1-99 % B, 1.6-2.0 min 99 % B



ReproSil pHoenix

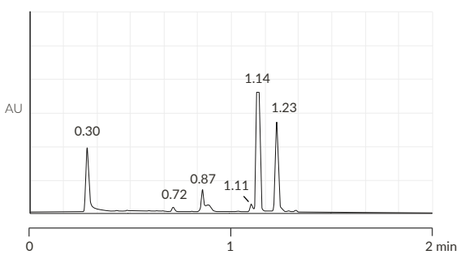
Column: ReproSil pHoenix C18 3 µm, 75 x 2.1 mm;
Eluent A: water + 0.1 vol% formic acid;
Eluent B: acetonitrile;
Gradient: 0-1.6 min 1-99 % B, 1.4-2.0 min 99 % B

Observe superior peak shape of ReproSil pHoenix vs. Waters Acquity



Waters Acquity

Column: Acquity UPLC BEH C18 1.7 µm, 50x2.1mm;
Eluent A: water + 0.2 vol% aqueous ammonia (32%);
Eluent B: acetonitrile;
Gradient: 0-1.6 min 1-99 % B, 1.6-2.0 min 99 % B

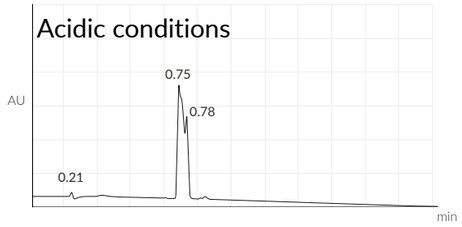


ReproSil pHoenix

Column: ReproSil pHoenix C18 3 µm, 75 x 2.1 mm;
Eluent A: water + 0.2 vol% aqueous ammonia (32%);
Eluent B: acetonitrile;
Gradient: 0-1.4 min 1-99 % B,1.4-2.0 min 99 % B

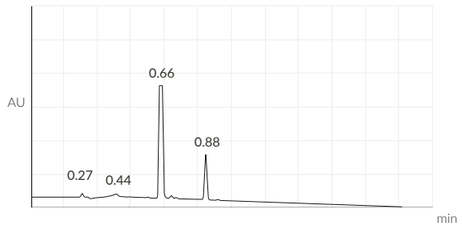
碱性和酸性洗脱条件下的选择性和峰形

Observe superior selectivity / resolution and peak shape of ReproSil pHoenix vs. Waters Acquity



Waters Acquity

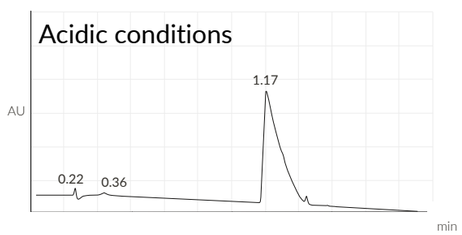
Column: Acquity UPLC BEH C18 1.7 µm, 50x2.1mm;
Eluent A: water + 0.1 vol% formic acid;
Eluent B: acetonitrile;
Gradient: 0-1.6 min 1-99 % B, 1.6-2.0 min99 % B



ReproSil pHoenix

Column: ReproSil pHoenix C18 3 µm, 75 x 2.1 mm;
Eluent A: water + 0.1 vol% formic acid;
Eluent B: acetonitrile;
Gradient: 0-1.6 min 1-99% B, 1.4-2.0 min99% B

Observe superior peak shape of ReproSil pHoenix vs. Waters Acquity



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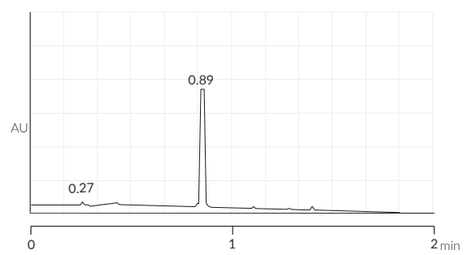
Gradient: 0-1.6 min 1-99 % B, 1.6-2.0 min 99 % B



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Gradient: 0-1.6 min 1-99 % B, 1.4-2.0 min 99 % B

Dr. Maisch

Any Column, Any Size, Any Media

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