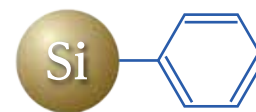


InertSustain® Phenyl

Physical Properties

- Silica : Newly Developed ES Silica Gel
- Particle Size : 2 µm, 3 µm, 5 µm
- Surface Area : 350 m²/g
- Pore Size : 100 Å (10 nm)
- Pore Volume : 0.85 mL/g
- Bonded Phase : Phenyl Groups
- End-capping : None
- Carbon Loading : 10 %
- USP Code : L11
- pH Range : 2 ~ 7.5



InertSustain Phenyl delivers an extremely unique reverse phase characteristics that are critical to resolving compounds that could not be separated on a C18 or C8 phase. InertSustain Phenyl provides not only pi-pi interactions, but also hydrogen bonding secondary interactions, which results in retaining polar compounds at the same time. As the phenyl groups are directly bonded to the silica gel, InertSustain Phenyl is compatible with the analysis of structural isomers due to its high stereo-selectivity (figure 2) while other alkyl phenyl type columns fails to separate.

Figure 1 : Comparison of Selectivity between InertSustain® Phenyl and InertSustain® C18

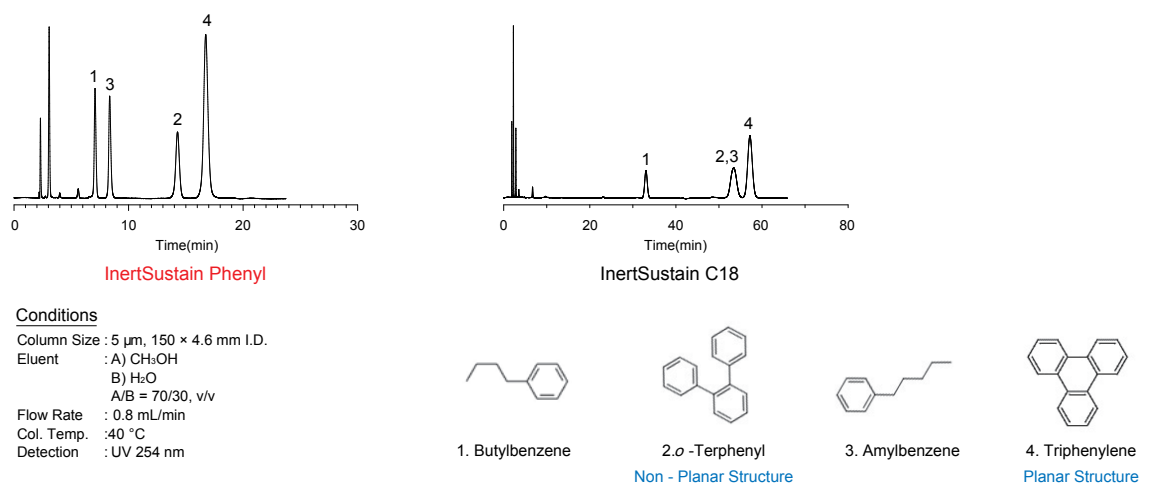
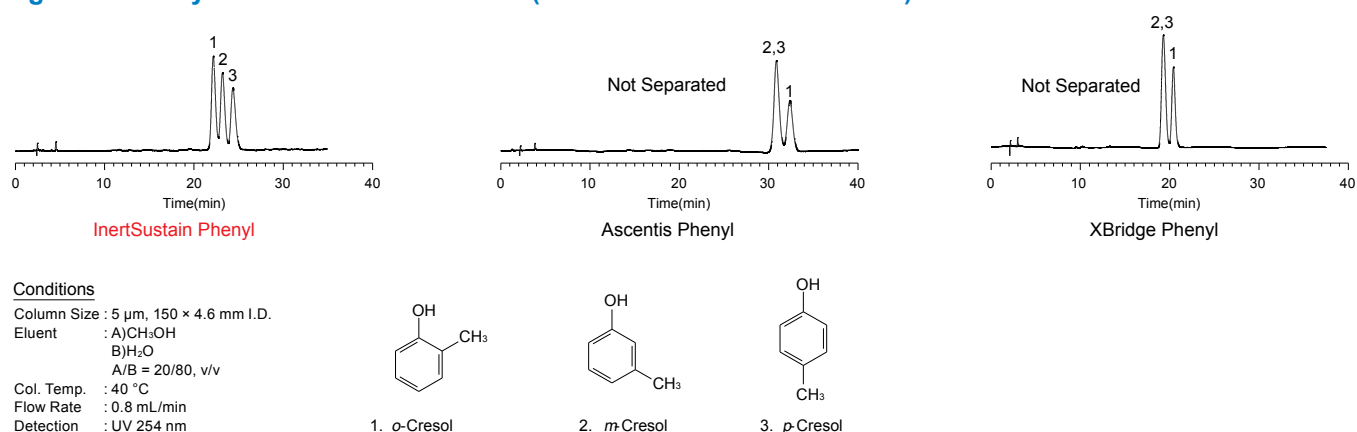


Figure 2 : Analysis of Structural Isomers (Positional Isomers of Cresol)



Analytical Columns

Particle Size: 2 µm	Length \ I.D.(mm)	2.1	3.0
		30	5020-16535
	50	5020-16536	5020-16541
	75	5020-16537	5020-16542
	100	5020-16538	5020-16543
	150	5020-16539	5020-16544

HPSeries Particle Size: 3 µm 50 MPa (500 Bar)	Length \ I.D. (mm)	2.1	3.0	4.6
	30	5020-16517	5020-16523	5020-16529
	50	5020-16518	5020-16524	5020-16530
	75	5020-16519	5020-16525	5020-16531
	100	5020-16520	5020-16526	5020-16532
	150	5020-16521	5020-16527	5020-16533
	250	5020-16522	5020-16528	5020-16534

* End-fittings are 1/16" Waters-compatible.
 * UHPLC compatible end-fittings are also available upon request for UHPLC systems (Ex: UPLC) to avoid dead volume.
 * Indicate "UP Type end-fittings" when ordering. (Please note that UP type is not available for a 4.6 mm I.D. column)
 * For maximum operating pressure information, please refer to page 46.

Particle Size: 3 µm	Length \ I.D. (mm)	1.0	1.5
	30	5020-16468	5020-16474
	50	5020-16469	5020-16475
	75	5020-16470	5020-16476
	100	5020-16471	5020-16477
	150	5020-16472	5020-16478
	250	5020-16473	5020-16479

Particle Size: 3 µm	Length \ I.D. (mm)	2.1	3.0	4.0	4.6
	30	5020-16432	5020-16439	5020-16446	5020-16453
	50	5020-16433	5020-16440	5020-16447	5020-16454
	75	5020-16434	5020-16441	5020-16448	5020-16455
	100	5020-16435	5020-16442	5020-16449	5020-16456
	150	5020-16436	5020-16443	5020-16450	5020-16457
	250	5020-16437	5020-16444	5020-16451	5020-16458

Particle Size: 5 µm	Length \ I.D. (mm)	1.0	1.5
	30	5020-16339	5020-16345
	50	5020-16340	5020-16346
	75	5020-16341	5020-16347
	100	5020-16342	5020-16348
	150	5020-16343	5020-16349
	250	5020-16344	5020-16350

Particle Size: 5 µm	Length \ I.D. (mm)	2.1	3.0	4.0	4.6
	30	5020-16302	5020-16309	5020-16316	5020-16323
	50	5020-16303	5020-16310	5020-16317	5020-16324
	75	5020-16304	5020-16311	5020-16318	5020-16325
	100	5020-16305	5020-16312	5020-16319	5020-16326
	150	5020-16306	5020-16313	5020-16320	5020-16327
	250	5020-16307	5020-16314	5020-16321	5020-16328

* End-fittings are 1/16" Waters-compatible.
 * For maximum operating pressure information, please refer to page 46.

Cartridge Guard Column E

I.D. of the Analytical Column Applicable (mm)	Length (mm)	I.D. (mm)	Replacement Cartridge E Guard Column (2 EA.)		Cartridge E Holder / Cartridge Set (2 Cartridge E Guard Columns & 1 Holder)	
			Particle Size		Particle Size	
			3 µm	5 µm	3 µm	5 µm
1.0	10	1.0	5020-16507	5020-16406	5020-16508	5020-16407
1.5, 2.1		1.5	5020-16509	5020-16408	5020-16510	5020-16409
2.1, 3.0		3.0	5020-16505	5020-16404	5020-16506	5020-16405
4.0, 4.6	20	4.0	5020-16503	5020-16402	5020-16504	5020-16403
2.1, 3.0		3.0	5020-16513	5020-16412	5020-16514	5020-16413
4.0, 4.6		4.0	5020-16511	5020-16410	5020-16512	5020-16411
Holder for Cartridge Guard Column E				For 10 mm Length		5020-08500
				For 20 mm Length		5020-08550

* End-fittings are 1/16" Waters-compatible.
 * For maximum operating pressure information, please refer to page 46.

InertSustain® Phenylhexyl

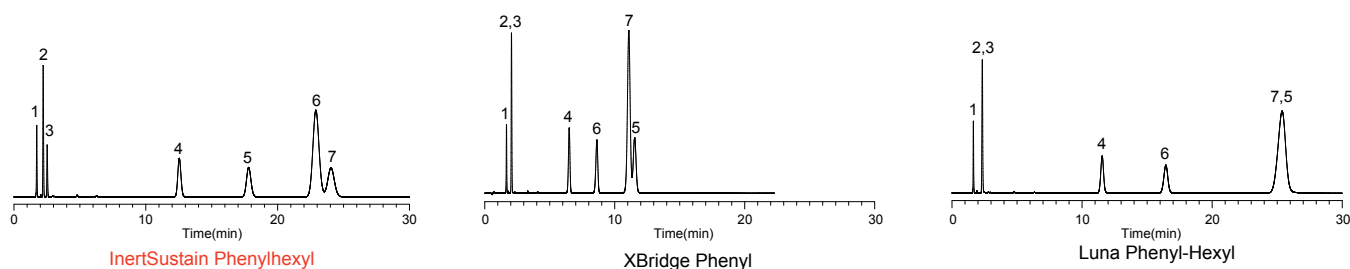
Physical Properties

- Silica : Newly Developed ES Silica Gel
- Particle Size : 3 µm, 5 µm
- Surface Area : 350 m²/g
- Pore Size : 100 Å (10 nm)
- Pore Volume : 0.85 mL/g
- Bonded Phase : Phenylhexyl Groups
- End-capping : Yes
- Carbon Loading : 9.0 %
- USP Code : L11
- pH Range : 1.0 ~ 10.0



InertSustain Phenylhexyl columns are bonded with phenylhexyl groups, which employs a phenyl ring with a hexyl (6- carbon) linker and is densely bonded to our newly developed ES silica gel delivering complementary selectivity to straight alkyl-chain columns, but with industry leading inertness, lot-to-lot reproducibility and low back pressure.

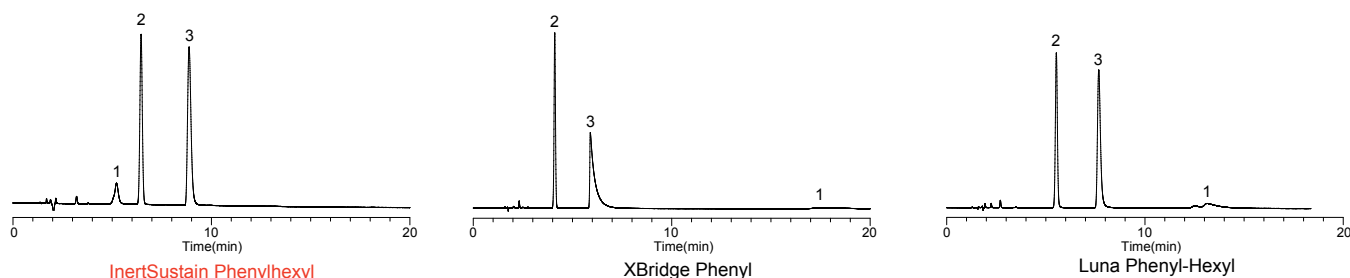
Figure 1 : Comparison of Selectivity with other brands



Conditions

Column Size : 5 µm, 150 × 4.6 mm I.D.	Sample : 1. Uracil
Eluent : A) CH ₃ OH	2. Caffeine
B) H ₂ O	3. Phenol
A/B = 70/30, v/v	4. Butylbenzene
Flow Rate : 1.0 mL / min	5. o-Terphenyl
Col. Temp. : 40 °C	6. Amylbenzene
Detection : UV 254 nm	7. Triphenylene

Figure 2 : Analysis of Acidic Compounds



Conditions

Column Size : 5 µm, 150 × 4.6 mm I.D.	Sample : 1. Brilliant Blue FCF
Eluent : A) CH ₃ CN	2. Phenol
B) 0.1% H ₃ PO ₄	3. Salicylic acid
A/B = 25/75, v/v	
Flow Rate : 1.0 mL/min	
Col. Temp. : 40 °C	
Detection : UV 254 nm	

Analytical Columns

HP Series Particle Size: 3 µm 50 Mpa(500 Bar)	Length \ I.D.(mm)	2.1	3.0	4.6
	30	5020-89209	5020-89215	5020-89221
	50	5020-89210	5020-89216	5020-89222
	75	5020-89211	5020-89217	5020-89223
	100	5020-89212	5020-89218	5020-89224
	150	5020-89213	5020-89219	5020-89225
	250	5020-89214	5020-89220	5020-89226

* End-fittings are 1/16" Waters-compatible.

* UHPLC compatible end-fittings are also available upon request for UHPLC systems (Ex: UPLC) to avoid dead volume.

* Indicate "UP Type end-fittings" when ordering. (Please note that UP type is not available for a 4.6 mm I.D. column)

* For maximum operating pressure information, please refer to page 46.

Particle Size: 3 µm	Length \ I.D. (mm)	1.0	1.5		
	30	5020-89160	5020-89166		
	50	5020-89161	5020-89167		
	75	5020-89162	5020-89168		
	100	5020-89163	5020-89169		
	150	5020-89164	5020-89170		
	250	5020-89165	5020-89171		
	Length \ I.D. (mm)	2.1	3.0	4.0	4.6
	30	5020-89124	5020-89131	5020-89138	5020-89145
	50	5020-89125	5020-89132	5020-89139	5020-89146
75	5020-89126	5020-89133	5020-89140	5020-89147	
100	5020-89127	5020-89134	5020-89141	5020-89148	
150	5020-89128	5020-89135	5020-89142	5020-89149	
250	5020-89129	5020-89136	5020-89143	5020-89150	

Particle Size: 5 µm	Length \ I.D. (mm)	1.0	1.5		
	30	5020-89038	5020-89044		
	50	5020-89039	5020-89045		
	75	5020-89040	5020-89046		
	100	5020-89041	5020-89047		
	150	5020-89042	5020-89048		
	250	5020-89043	5020-89049		
	Length \ I.D. (mm)	2.1	3.0	4.0	4.6
	30	5020-89001	5020-89008	5020-89015	5020-89022
	50	5020-89002	5020-89009	5020-89016	5020-89023
75	5020-89003	5020-89010	5020-89017	5020-89024	
100	5020-89004	5020-89011	5020-89018	5020-89025	
150	5020-89005	5020-89012	5020-89019	5020-89026	
250	5020-89006	5020-89013	5020-89020	5020-89027	

* End-fittings are 1/16" Waters-compatible.

* For maximum operating pressure information, please refer to page 46.

Cartridge Guard Column E

I.D. of the Analytical Column Applicable (mm)	Length (mm)	I.D. (mm)	Replacement Cartridge E Guard Column (2 EA.)		Cartridge E Holder / Cartridge Set (2 Cartridge E Guard Columns & 1 Holder)	
			Particle Size		Particle Size	
			3 µm	5 µm	3 µm	5 µm
1.0	10	1.0	5020-89199	5020-89105	5020-89200	5020-89106
1.5, 2.1		1.5	5020-89201	5020-89107	5020-89202	5020-89108
2.1, 3.0		3.0	5020-89197	5020-89103	5020-89198	5020-89104
4.0, 4.6	20	4.0	5020-89195	5020-89101	5020-89196	5020-89102
2.1, 3.0		3.0	5020-89205	5020-89111	5020-89206	5020-89112
4.0, 4.6		4.0	5020-89203	5020-89109	5020-89204	5020-89110
Holder for Cartridge Guard Column E			For 10 mm Length		5020-08500	
			For 20 mm Length		5020-08550	

* End-fittings are 1/16" Waters-compatible.

* For maximum operating pressure information, please refer to page 46.