

HyperClone™ is a GUARANTEED alternative to Hypersil™ at a fraction of the cost

If HyperClone™ does not provide at least an equivalent separation compared to Hypersil® columns of the same phase, particle size and comparable dimensions, send in your comparative data within 45 days and keep the HyperClone column for FREE.

HyperClone was developed by Phenomenex and is packed by Phenomenex, thereby reducing the chance of column-to-column variation.

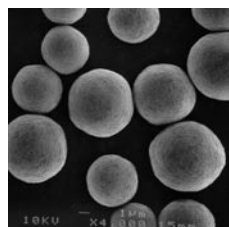
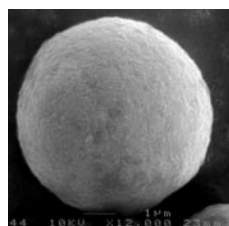
Comparisons of physical and chemical characteristics of HyperClone™ and Hypersil™ are listed below. As you can see, HyperClone™ and Hypersil™ compare very well for important specifications such as particle size, pore size and carbon load.

HyperClone™

VS.

Hypersil™

SEM of Base Silica



Material Characteristics

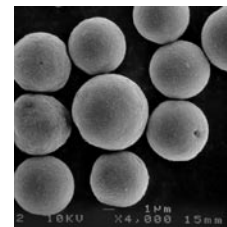
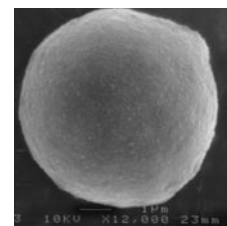
Parameter

HyperClone™ (BDS silica)		Hypersil™ (BDS silica) ‡	
3, 5	Particle Size (µm)	3, 5	
130	Pore Size (Å)	130	
155	Surface Area (m ² /g)	170	
0.6	Pore Volume (mL/g)	0.6	

HyperClone™ (regular silica)		Hypersil™ (regular silica) ‡	
3, 5	Particle Size (µm)	3, 5	
120	Pore Size (Å)	120	
155	Surface Area (m ² /g)	170	
0.6	Pore Volume (mL/g)	0.6	

HyperClone™		Hypersil™ ‡	
Carbon Load % Comparison			
7	BDS C8	7	
11	BDS C18	11	
6.5	MOS (C8)	6.5	
10	ODS (C18)	10	
4	CN (CPS)	4	

SEM of Base Silica

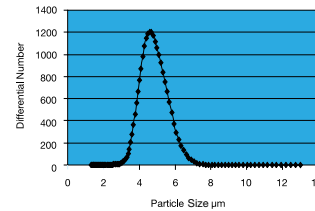
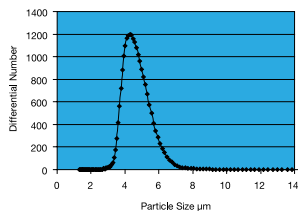


HyperClone™

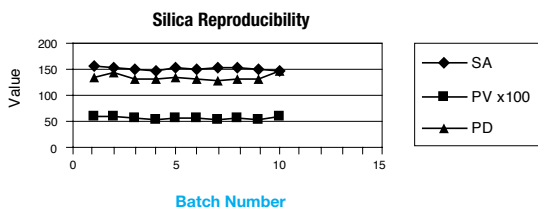
VS.

Hypersil™

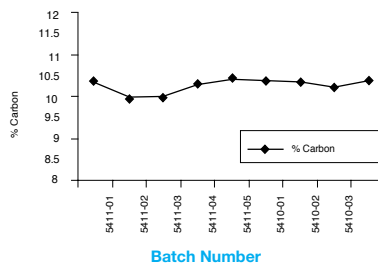
Particle Size Distribution†



HyperClone™ Reproducibility

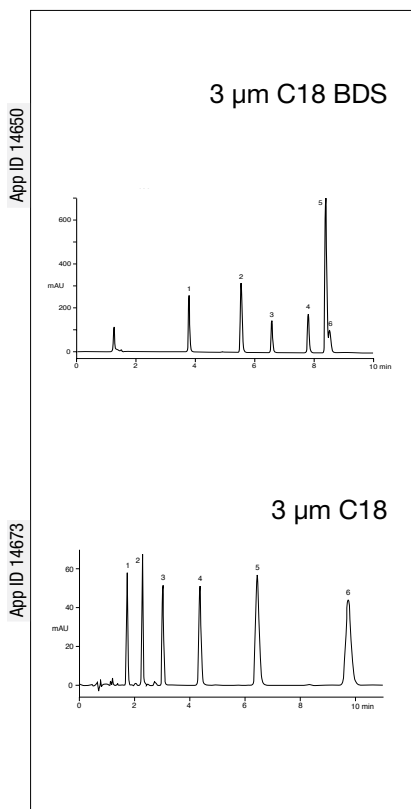
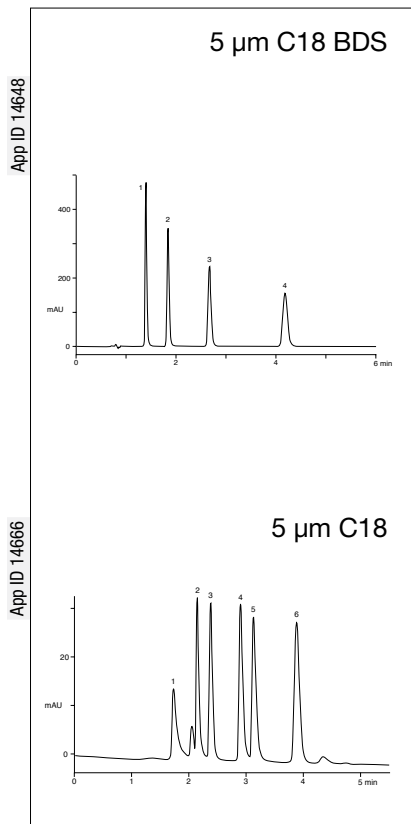


Carbon Load Data

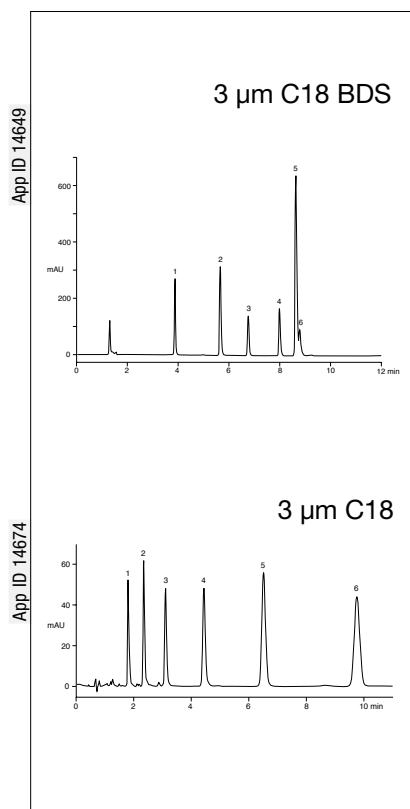
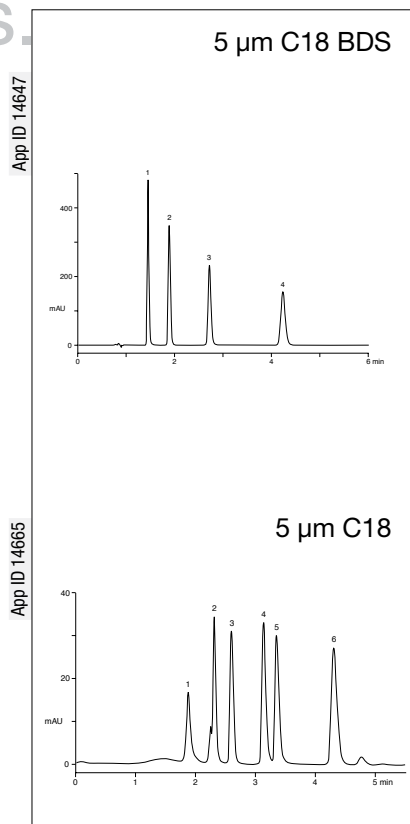


‡ All Hypersil information obtained from Thermo Electron Corporation 2006-2007 catalog.

HyperClone™



Hypersil™



Parabens

Dimensions: 150 x 4.6 mm
Mobile Phase: Acetonitrile / 50 mM KH_2PO_4 , pH=7.0 (40:60)
Flow Rate: 2 mL/min
Detection: UV @ 260 nm
Sample: 1. Methylparaben
 2. Ethylparaben
 3. Propylparaben
 4. Butylparaben

Organic Acids

Dimensions: 150 x 4.6 mm
Mobile Phase: 20 mM KH_2PO_4 , pH=2.5 / Methanol (97:3)
Flow Rate: 1 mL/min
Detection: UV @ 220 nm
Sample: 1. Oxalic Acid
 2. Formic Acid
 3. Malic Acid
 4. Lactic Acid
 5. Acetic Acid
 6. Citric Acid

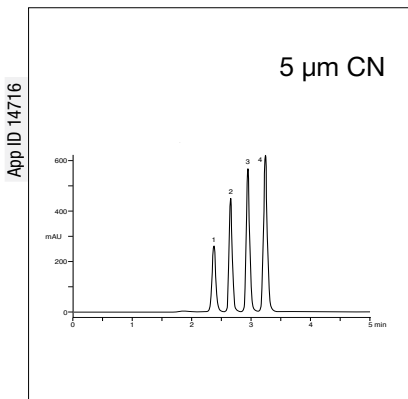
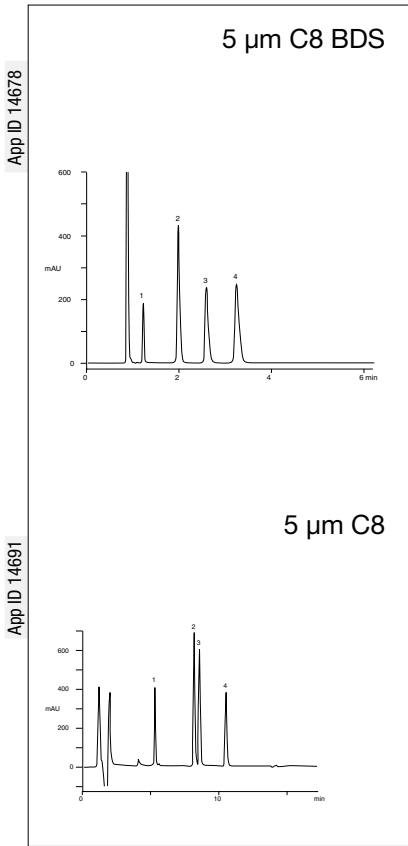
Basic Compounds (Beta-Blockers)

Dimensions: 100 x 4.6 mm
Mobile Phase: A) Acetonitrile
 B) 20 mM KH_2PO_4 , pH=2.5
Gradient: A/B (5:95) to A/B (50:50) in 10 min
Flow Rate: 1.5 mL/min
Detection: UV @ 230 nm
Sample: 1. Atenolol
 2. Pindolol
 3. Metoprolol
 4. Propranolol
 5. Labetalol
 6. Alprenolol

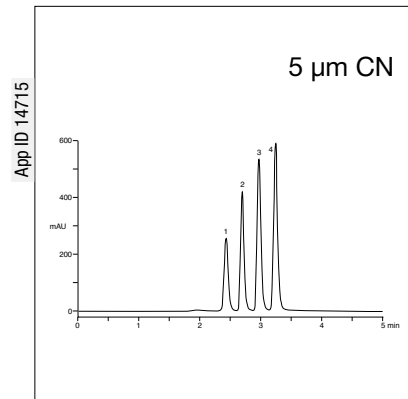
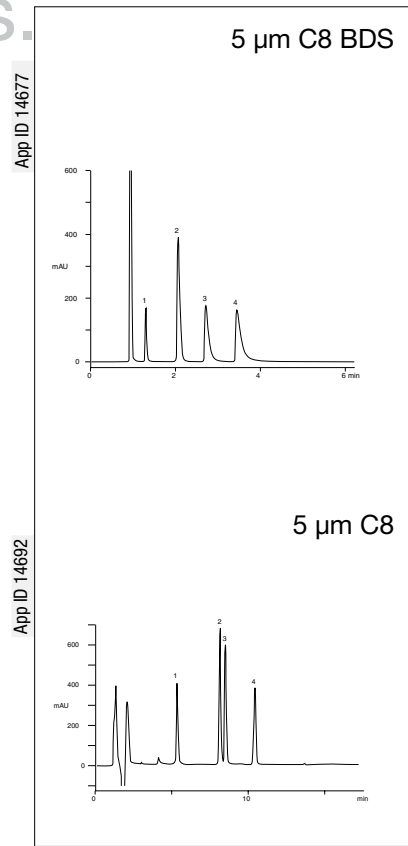
Alkylbenzenes

Dimensions: 100 x 4.6 mm
Mobile Phase: Acetonitrile / Water (65:35)
Flow Rate: 1.5 mL/min
Detection: UV @ 254 nm
Sample: 1. Benzene
 2. Toluene
 3. Ethylbenzene
 4. Propylbenzene
 5. Butylbenzene
 6. Amylbenzene

HyperClone™



Hypersil™



Basic Drugs

Dimensions: 150 x 4.6 mm
Mobile Phase: 50 mM KH₂PO₄, pH=2.5 / Acetonitrile (80:20)
Flow Rate: 2 mL/min
Detection: UV @ 220 nm
Sample: 1. Pseudoephedrine
 2. Lidocaine
 3. Pyrilamine
 4. Chlorpheniramine

Fatty Acids (Long Chain)

Dimensions: 150 x 4.6 mm
Mobile Phase: A) 0.1 % Acetic Acid in Water
 B) 0.1 % Acetic Acid in Acetonitrile
Gradient: A/B (30:70) to A/B (10:90) in 12 min
Flow Rate: 1 mL/min
Detection: UV @ 210 nm
Sample: 1. Lauric Acid
 2. Arachidonic Acid
 3. Linoleic Acid
 4. Oleic Acid

Phthalates

Dimensions: 150 x 4.6 mm
Mobile Phase: Hexane / [Methylene chloride:Methanol (80:20)] (95:5)
Flow Rate: 1 mL/min
Detection: UV @ 254 nm
Sample: 1. Diisooctyl Phthalate
 2. Dibutyl Phthalate
 3. Diethyl Phthalate
 4. Dimethyl Phthalate

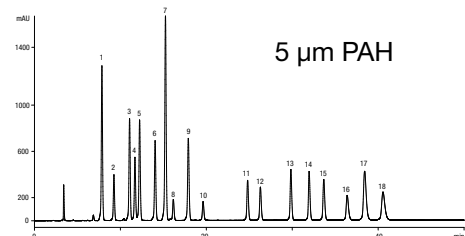
App ID 15988

PAH: EPA METHOD 610

Column: HyperClone 5 μm PAH
Dimensions: 250 x 4.6 mm
Part No.: 00G-4427-E0
Mobile Phase: A: Water B: Acetonitrile
Gradient: 0-5 minute 50 % B, 5-30 minute 100 % B, hold 20 minute at 100 % (50 minute total run time)
Flow Rate: 1.1 mL/min
Detection: UV @ 210 nm

Sample:

1. Naphthalene	7. o-Terphenyl(1S)	13. Benzo[b]fluoranthene
2. Acenaphthylene	8. Anthracene	14. Benzo[k]fluoranthene
3. 2-Methylnaphthalene	9. Fluoranthene	15. Benzo[a]pyrene
4. Acenaphthene	10. Pyrene	16. Dibenzo[a,h]anthracene
5. Fluorene	11. Benz[a]anthracene	17. Benzo[g,h,i]perylene
6. Phenanthrene	12. Chrysene	18. Indeno[1,2,3-cd]pyrene



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ORDERING INFORMATION

SecurityGuard™ Analytical Cartridges require universal holder Part No.: KJO-4282

3 µm Minibore and Analytical Columns (mm)						SecurityGuard™ Cartridges	
Phases	150 x 2.0	150 x 3.2	100 x 4.6	125 x 4.0	150 x 4.6	4 x 2.0 mm* /10pk	4 x 3.0 mm* /10pk
Silica	—	—	—	—	00F-4353-E0	AJO-4347	AJO-4348
MOS (C8)	00F-4354-B0	00F-4354-R0	00D-4354-E0	00E-4354-D0	00F-4354-E0	AJO-4289	AJO-4290
ODS (C18)	00F-4356-B0	00F-4356-R0	00D-4356-E0	00E-4356-D0	00F-4356-E0	AJO-4286	AJO-4287
CN	—	—	00D-4421-E0	—	00F-4421-E0	AJO-4304	AJO-4305
BDS C8	00F-4417-B0	—	00D-4417-E0	—	00F-4417-E0	AJO-4289	AJO-4290
BDS C18	00F-4419-B0	00F-4419-R0	00D-4419-E0	00E-4419-D0	00F-4419-E0	AJO-4286	AJO-4287

for ID: 2.0-3.0 mm 3.2-8.0 mm

5 µm Minibore and Analytical Columns (mm)							SecurityGuard™ Cartridges				
Phases	150 x 2.0	150 x 3.2	250 x 3.2	125 x 4.0	250 x 4.0	100 x 4.6	125 x 4.6	150 x 4.6	250 x 4.6	4 x 2.0 mm* /10pk	4 x 3.0 mm* /10pk
Silica	—	—	—	—	—	—	—	00F-4358-E0	00G-4358-E0	AJO-4347	AJO-4348
MOS (C8)	00F-4359-B0	—	—	00E-4359-D0	—	—	—	00F-4359-E0	00G-4359-E0	AJO-4289	AJO-4290
ODS (C18)	00F-4361-B0	00F-4361-R0	00G-4361-R0	00E-4361-D0	00G-4361-D0	—	—	00F-4361-E0	00G-4361-E0	AJO-4286	AJO-4287
CN	—	00F-4422-R0	00G-4422-R0	—	—	—	—	00F-4422-E0	00G-4422-E0	AJO-4304	AJO-4305
PAH	—	—	—	—	—	00D-4427-E0	00E-4427-E0	—	00G-4427-E0	—	—
BDS C8	00F-4418-B0	—	—	—	—	—	—	00F-4418-E0	00G-4418-E0	AJO-4289	AJO-4290
BDS C18	00F-4420-B0	00F-4420-R0	—	00E-4420-D0	00G-4420-D0	—	—	00F-4420-E0	00G-4420-E0	AJO-4286	AJO-4287

for ID: 2.0-3.0 mm 3.2-8.0 mm

5 µm Semi-Prep and Preparative Columns (mm)			SecurityGuard™ Cartridges	
Phases	250 x 10	250 x 21.2	10 x 10 mm‡ /3pk	15 x 21.2 mm** /ea
ODS (C18)	00G-4361-N0	00G-4361-P0	AJO-7221	AJO-7839
BDS C18	00G-4420-N0	00G-4420-P0	AJO-7221	AJO-7839

for ID: 9-16 mm 18-30 mm

*SecurityGuard™ Analytical Cartridges require holder, Part No.: KJO-4282

‡Semi-prep SecurityGuard™ Cartridges require holder, Part No.: AJO-7220

**PREP SecurityGuard™ Cartridges require holder, Part No.: AJO-8223



Other dimensions available upon request.



See p. 219 for SecurityGuard Cartridge Holders and Cartridges.

HyperClone™ is a trademark of Phenomenex, Inc.
Hypersil™ is a trademark of Thermo Electron Corporation.
Phenomenex is not associated with Thermo Electron Corporation.

Comparative chromatograms shown on previous pages may not be representative of all applications.