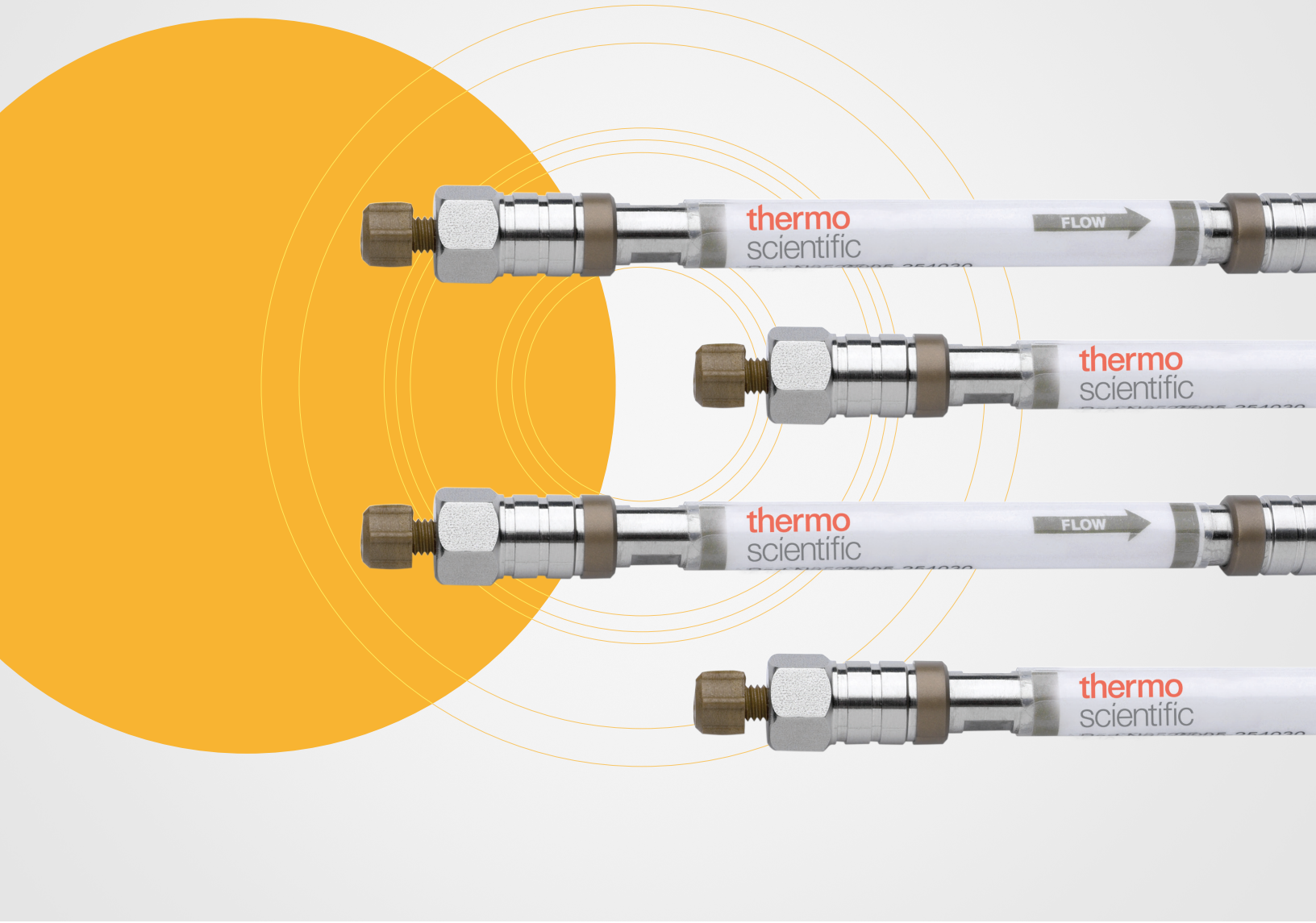
thermo scientific



Hypersil GOLD HPLC columns

Outstanding peak shape for your separations

ThermoFisher
SCIENTIFIC

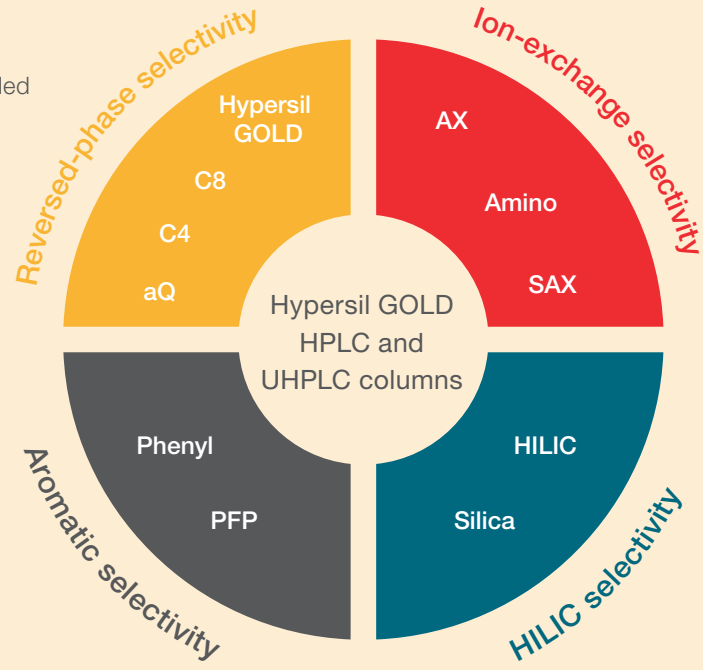
Hypersil GOLD columns

Designed for improved chromatography, Thermo Scientific™ Hypersil GOLD™ columns are the culmination of 40 years of experience in the product development and manufacturing of HPLC media and columns. The range and capabilities of this state-of-the-art family of columns, with numerous chemistries and a range of particle sizes and hardware formats meet the challenges of modern chromatography.

The highly pure Thermo Scientific™ Hypersil GOLD™ silica is manufactured, bonded and packed in ISO 9001:2008 accredited facilities, operating under strict protocols using robust procedures and extensive quality control testing. The manufacturing and bonding process creates an even surface with fewer silanols leading to reduced secondary interactions. This ensures consistent performance, column after column.

With over 40 years of experience in providing excellent columns for our customers, see how Thermo Scientific™ Hypersil GOLD™ columns complete your workflow

Hypersil GOLD Hypersil GOLD™ C8 Hypersil GOLD™ C4	Traditional reversed-phase columns for hydrophobic interaction; C8 and C4 are better when less hydrophobicity is needed
Hypersil GOLD™ aQ	Good for basic compounds separations by reversed-phase using aqueous mobile phase
Hypersil™ AX Hypersil™ SAX Hypersil™ Amino	Ion-exchange columns are preferred for ionic compounds
Hypersil™ HILIC Hypersil™ Silica	Polar compounds are retained and separated well with these hydrophilic columns
Hypersil™ Phenyl Hypersil™ PFP	Aromatic compounds are separated better with these columns



Contents

Phase properties

Hypersil GOLD HPLC columns are available in 12 different chemistries to optimize separations and maximize productivity. The extensive range of Hypersil GOLD columns offers chromatographers outstanding peak shape for reversed-phase, ion-exchange, hydrophilic interaction liquid chromatography (HILIC) or normal-phase chromatography. With 1.9 µm particle size available for all 12 phases, Hypersil GOLD columns offer chromatographers flexibility in choosing the correct column, whether they are using conventional or ultra-high pressure liquid chromatography (LC) systems.

Hypersil GOLD columns	Excellent peak shape for all analyte types
Hypersil GOLD C8 columns	Similar selectivity to C18 columns, but with reduced retention
Hypersil GOLD C4 columns	Similar selectivity to C18 and C8 columns, but with reduced retention
Hypersil GOLD aQ columns	Polar endcapped C18 columns, stable in 100% aqueous mobile phase, providing enhanced retention and resolution of polar analytes
Hypersil GOLD PFP columns	Perfluorinated phenyl columns offering alternative selectivity. The fluorine atoms around the phenyl ring enhance pi-pi interactions with aromatic molecules
Hypersil GOLD CN columns	Alternative selectivity with lower hydrophobicity and can also be used for normal-phase separations
Hypersil GOLD Phenyl columns	Excellent retention and unique selectivity for aromatic analytes
Hypersil GOLD Amino columns	Can be used in reversed-phase, normal-phase, ion-exchange and HILIC modes and are particularly useful for separating carbohydrates
Hypersil GOLD AX columns	Separation of smaller proteins, peptides, anionic species and polar molecules
Hypersil GOLD SAX columns	A quarternary amine ion-exchange ligand ideally suited to separating small polar organic analytes in aqueous mobile phases
Hypersil GOLD Silica columns	Separation of non-polar and moderately polar organic compounds by normal-phase chromatography
Hypersil GOLD HILIC columns	Enhanced retention of polar and hydrophilic analytes that are problematic using reversed-phase columns

Phase overview

Hypersil GOLD columns are designed to provide exceptional peak shape with minimal peak tailing. These columns are packed to achieve exceptional efficiency, peak shape and resolution for your high performance liquid chromatography (HPLC) and liquid chromatography-mass spectrometry (LC-MS) applications. Hypersil GOLD columns are fully porous with optimized hydrophobic capacity resulting in fast run times and are available in several particle size.

Hypersil GOLD columns are a great starting point for high efficiency separations and your go-to column for starting method development.

Particle details

Phase name	1.9 µm	3 µm	5 µm	12 µm	Carbon load (%)	UPS	pH range
Hypersil GOLD	•	•	•	•	10	L1	2–11
Hypersil GOLD C8	•	•	•		8	L7	2–9
Hypersil GOLD C4	•	•	•		5	L26	2–8
Hypersil GOLD aQ	•	•	•		12	L1	2–9
Hypersil GOLD PFP	•	•	•		8	L43	2– 8
Hypersil GOLD Phenyl	•	•	•		8	L11	2–8
Hypersil GOLD CN	•	•	•		6	L10	2–8
Hypersil GOLD Amino	•	•	•		2	L8	2–8
Hypersil GOLD AX	•	•	•		6	–	2–8
Hypersil GOLD SAX	•	•	•		2.5	L14	2–8
Hypersil GOLD Silica	•	•	•		–	L3	2–8
Hypersil GOLD HILIC	•	•	•		6	–	2–8

Particle details

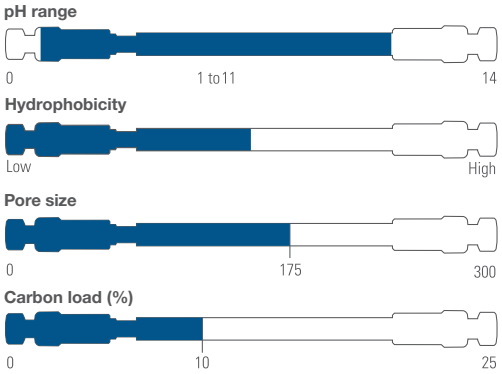
Particle diameter (µm)	Pore diameter (Å)	Surface area (m^2/g)
1.9	175	220
3	175	220
5	175	220
12	175	220

Hypersil GOLD columns

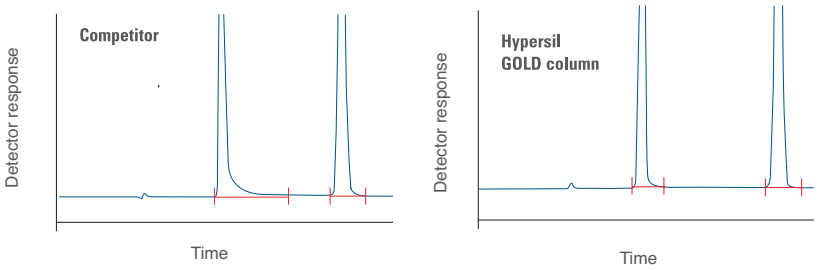
A silica-based, reversed-phase column designed specifically for separating DNPH derivatives of aldehydes and ketones

Hypersil GOLD columns are based on highly pure silica and a novel proprietary derivatization and endcapping procedure using alkyl chain chemistry. This gives:

- Significant reduction in peak tailing while retaining C18 (USP L1) selectivity
- Excellent resolution, efficiency and sensitivity
- Confidence in the accuracy and quality of analytical data



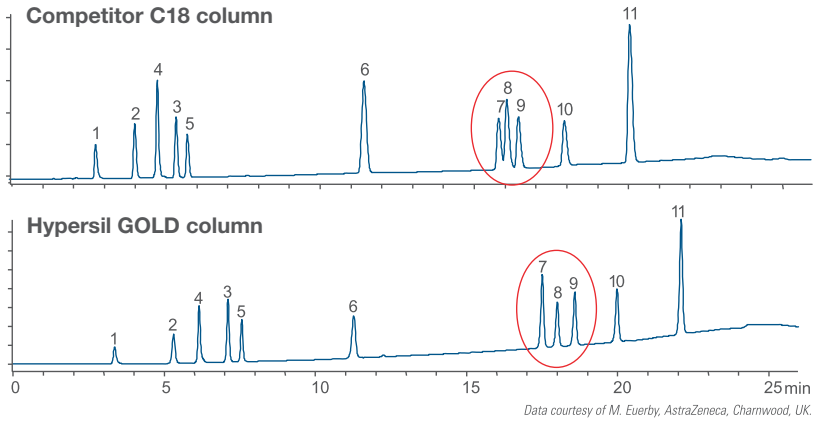
Particle size 1.9 µm, 3 µm, 5 µm, 12 µm **USP** L1



Hypersil GOLD columns offer improved peak shape, even for basic analytes.

Enhanced resolution

Robust assay development requires a clear definition of resolution expectations. Narrow symmetrical chromatographic peaks ensure that optimum resolution is achieved. Obtaining narrow peak widths is especially challenging for basic pharmaceutical compounds. The reduced silanol activity on Hypersil GOLD columns reduces tailing for basic analytes, thus improving resolution.



Data courtesy of M. Euerby, AstraZeneca, Charnwood, UK.

Hypersil GOLD columns provide excellent resolution between critical pairs, aiding separation of closely related species.

Improved sensitivity

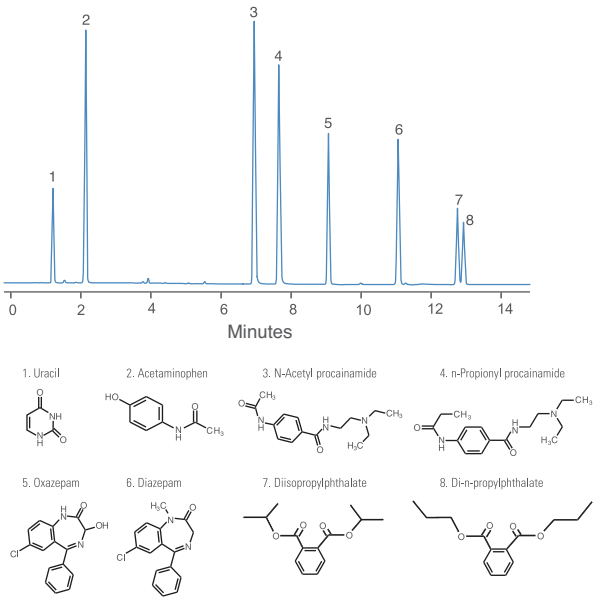
Outstanding peak shape results in greater sensitivity. When peaks exhibit tailing, peak height is reduced, therefore compromising the sensitivity of the analysis. The highly symmetrical peaks provided by Hypersil GOLD columns enhance peak height and allow for optimised peak integration calculations. This can be particularly critical when low concentrations of an analyte are present, for example in an impurity assay.

Reproducibility

Our Hypersil GOLD columns are exceptionally reproducible for reliable chromatography, column after column. This allows the user to be confident that assays developed with Hypersil GOLD columns will be robust and stable for the life of the assay, making them an ideal choice for new method development.

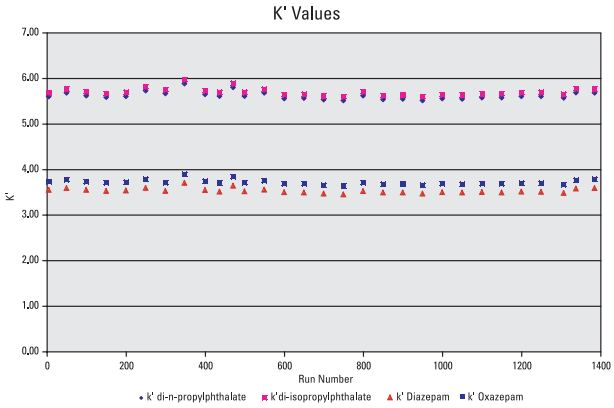
pH stability

Hypersil GOLD columns are well suited to extended pH applications and have been shown to produce robust assays at high pH. At low pH, excellent column stability and reproducibility are illustrated over 1500 injections at pH 1.8.



Hypersil GOLD column, 5 µm, 150 × 4.6 mm	
Mobile phase	A: 0.1% ammonia pH 10.6 B: Methanol + 0.1% ammonia
Gradient	5–100% B in 15 min
Flow rate	1.0 mL/min
Injection volume	10 µL
Detection	UV at 254 nm
Temperature	30 °C

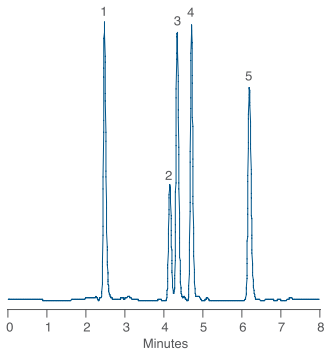
High pH stability assay (pH 10.6) of Hypersil GOLD columns.



Stability of Hypersil GOLD columns at low pH. No loss of retention after 28 L of mobile phase in 19.5 days of analysis.

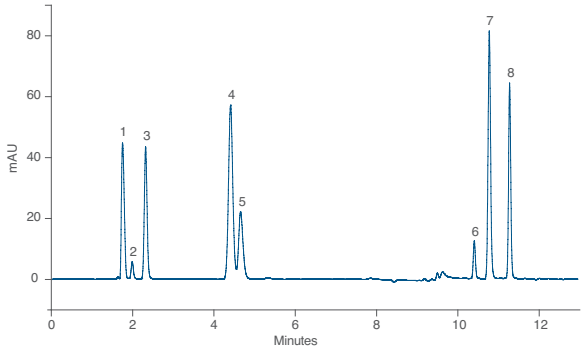
Pharmaceutical

Cepha antibiotics



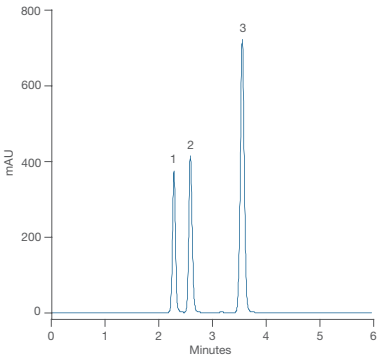
Hypersil GOLD column, 5 µm, 150 × 4.6 mm	
Mobile phase	(A) 0.1% acetic acid (B) Acetonitrile
Gradient	20–70% B in 10 min
Flow rate	1 mL/min
Injection volume	2 µL
Detection	UV, 254 nm
Temperature	25 °C
Analytes	1. Cefadroxil 2. Cefaclor 3. Cephalexin 4. Cephradine 5. Cefazolin

Cough/cold formulation



Hypersil GOLD column, 5 µm, 150 × 4.6 mm		
Mobile phase	(A) 20 mM ammonium formate at pH 3.0 (B) Methanol	
Gradient	Time (min)	% B
	0	10
	5	10
	10	70
Flow rate	1.5 mL/min	
Detection	UV, 270 nm	
Temperature	25 °C	
Analytes	1. 4-Amino phenol 2. (chlorpheniramine) maleate 3. Phenylephrine 4. Acetaminophen 5. Saccharin 6. Impurity from 4-Amino phenol 7. 4-Nitro phenol 8. Chlorpheniramine	

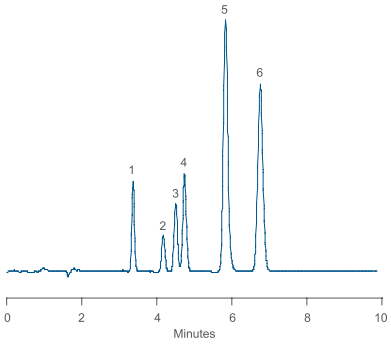
Anaesthetics



Hypersil GOLD column, 5 µm, 150 × 4.6 mm	
Mobile phase	(A) 0.05 M monopotassium phosphate pH 3 (B) Acetonitrile
Isocratic	50:50
Flow rate	1.25 mL/min
Injection volume	2 µL
Detection	UV at 220 nm
Temperature	25 °C
Analytes	1. Lidocaine 2. Tetracaine 3. Benzocaine

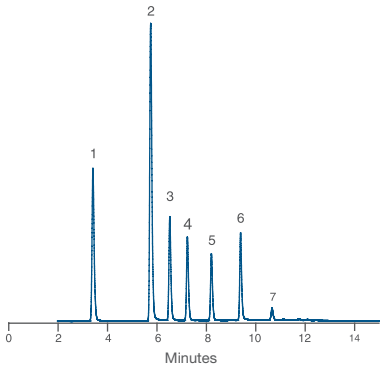
Environmental

Polycyclic aromatic hydrocarbons



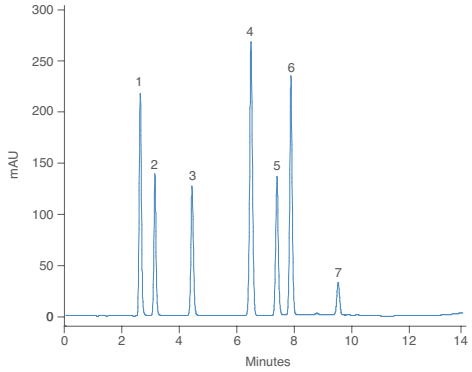
Hypersil GOLD column, 5 µm, 150 × 4.6 mm	
Mobile phase	(A) Methanol (B) Water
Isocratic	75:25
Flow rate	1 mL/min
Injection volume	2 µL
Detection	UV, 269 nm
Temperature	25 °C
Analytes	1. Naphthalene 2. Fluorene 3. Phenanthrene 4. Anthracene 5. Pyrene 6. Chrysene

Banned aromatic amines



Hypersil GOLD column, 3 µm, 150 × 2.1 mm	
Mobile phase	(A) 25 mM ammonium acetate at pH 5 (B) Acetonitrile
Gradient	20–100% B in 10 min
Flow rate	0.2 mL/min
Detection	UV, 254 nm
Temperature	40 °C
Analytes	1. 2,4-Diaminotoluene 2. 4,4-Oxydianiline 3. o-Toluidine 4. 2-Methoxy-5-methylaniline 5. 2,4,5-Trimethylaniline 6. 4,4'-Methylene-bis (2-chloroaniline) 7. Unknown

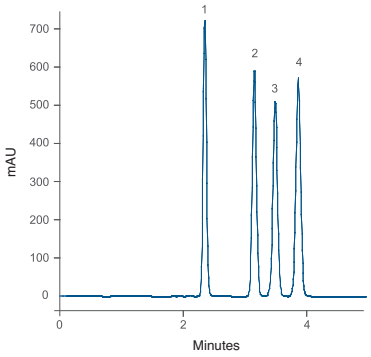
Endocrine disruptors



Hypersil GOLD column, 5 µm, 150 × 4.6 mm	
Mobile phase	(A) Water (B) Acetonitrile
Gradient	25–70% B in 20 min
Flow rate	1.5 mL/min
Injection volume	2 µL
Detection	UV, 220 nm
Temperature	25 °C
Analytes	1. Desethyl atrazine 2. Estriol 3. Simazine 4. Atrazine 5. Diuron 6. Bisphenol A 7. Estrone

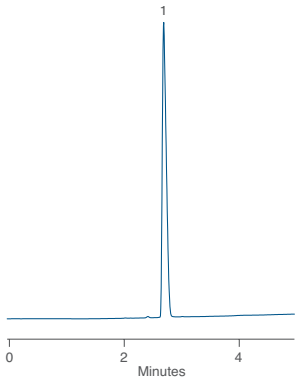
Toxicology

Testosterones



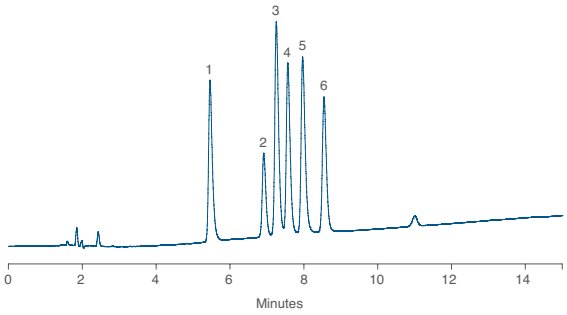
Hypersil GOLD column, 5 µm, 150 × 4.6 mm	
Mobile phase	(A) Water (B) Acetonitrile
Isocratic	43:57
Flow rate	1 mL/min
Detection	UV, 254 nm
Temperature	25 °C
Analytes	1. 11-Ketotestosterone 2. 19-Nortestosterone (nandrolone) 3. Testosterone 4. Epitestosterone

Chlorpromazine



Hypersil GOLD column, 5 µm, 50 × 2.1 mm	
Mobile phase	(A) 0.1% formic acid (B) Acetonitrile + 0.1% formic acid
Gradient	15–80% B in 5 min
Flow rate	1 mL/min
Detection	UV, 254 nm
Temperature	30 °C
Analyte	Chlorpromazine

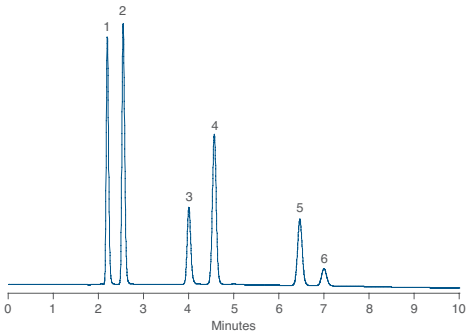
Tricyclic antidepressants



Hypersil GOLD, 5 µm, 150 × 4.6 mm	
Mobile phase	(A) 0.1% formic acid (B) Acetonitrile + 0.1% formic acid
Gradient	30–50% B in 15 min
Flow rate	1 mL/min
Detection	UV, 254 nm
Temperature	30 °C
Concentration	2.5 ng/µL
Analytes	1. Doxepin 2. Protriptyline 3. Imipramine 4. Nortriptyline 5. Amitriptyline 6. Trimipramine

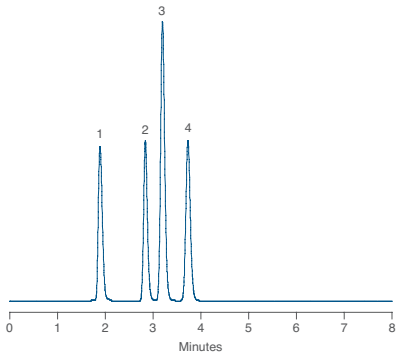
Food safety

Energy drink additives



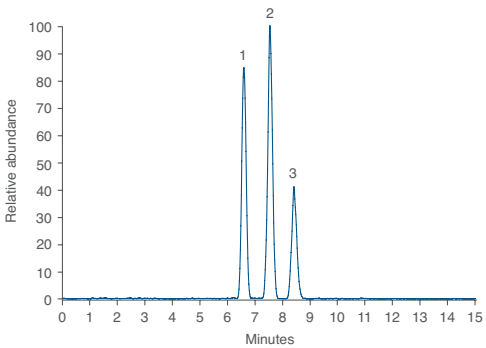
Hypersil GOLD column, 5 µm, 150 × 4.6 mm	
Mobile phase	(A) 10 mM ammonium acetate at pH 5.0 (B) Methanol
Gradient	30–45% B in 10 min
Flow rate	1 mL/min
Detection	UV, 230 nm
Temperature	25 °C
Analytes	1. Acesulfame 2. Saccharin 3. Caffeine 4. Benzoic acid 5. Sorbic acid 6. Aspartame

Coumaric acids



Hypersil GOLD column, 5 µm, 150 × 4.6 mm	
Mobile phase	(A) 0.1% formic acid (B) Acetonitrile
Isocratic	70:30
Flow rate	1 mL/min
Detection	UV, 270 nm
Temperature	40 °C
Analytes	1. Uracil 2. p-Coumaric acid 3. m-Coumaric acid 4. o-Coumaric acid

Tocopherols

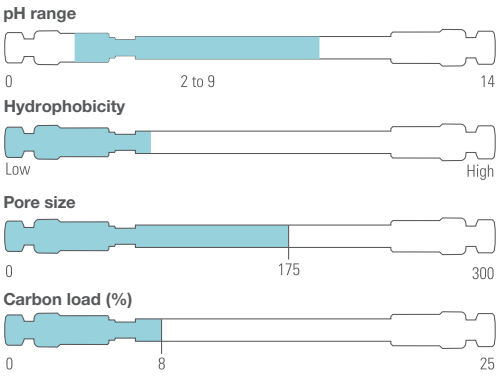


Hypersil GOLD column, 5 µm, 150 × 4.6 mm	
Mobile phase	(A) Water (B) Methanol
Isocratic	5:95
Flow rate	1 mL/min
Detection	-ESI
Temperature	30 °C
Analytes	1. δ-Tocopherol 2. γ-Tocopherol 3. α-Tocopherol

Hypersil GOLD C8 columns

Enhanced resolution, efficiency, sensitivity and speed

- Analytes of medium hydrophobicity
- When a less hydrophobic phase is required to obtain adequate retention



Particle size 1.9 µm, 3 µm, 5 µm **USP** L7

Similar selectivity but less retention than C18

Hypersil GOLD C8 media provides similar selectivity to C18 with a predictable elution order, but less retention. This feature is particularly useful where lower hydrophobicity is needed in order to successfully retain compounds of of interest. Hypersil GOLD C8 columns are recommended for analytes of medium hydrophobicity or when a less hydrophobic phase is required to obtain adequate retention.

Faster separations

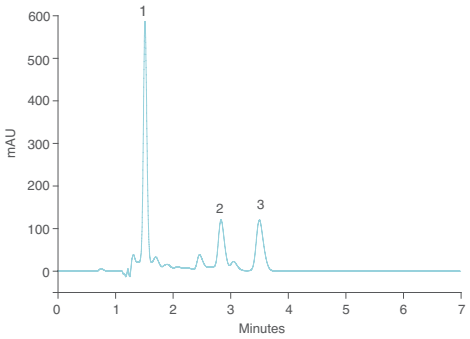
Hypersil GOLD C8 columns can provide improved throughput of analysis over that of a C18 alkyl chain chemistry. Hydrophobic interactions are reduced, allowing compounds to elute quicker from the column.

Excellent peak shapes with high-efficiency and outstanding sensitivity

Hypersil GOLD C8 columns provide very symmetrical peak shapes while also improving capabilities such as speed of analysis, efficiency and sensitivity.

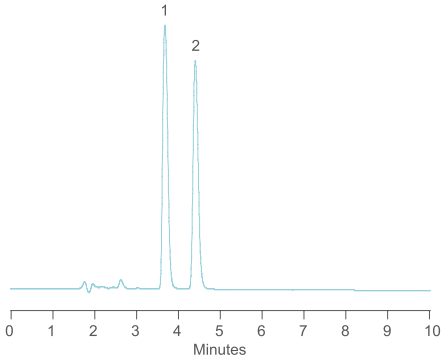
Food safety

β-Carotene



Hypersil GOLD C8 column, 5 µm, 150 × 4.6 mm	
Mobile phase	Methanol
Flow rate	1.5 mL/min
Detection	UV, 450 nm
Temperature	25 °C
Analytes	1. Lutein 2. Lycopene 3. β-Carotene

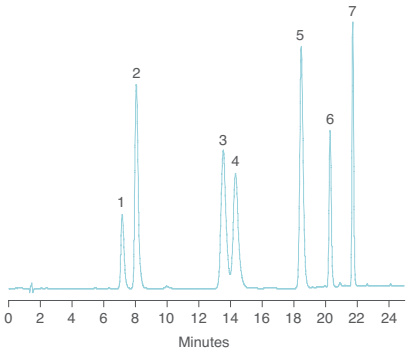
Fatty acids



Hypersil GOLD C8 column, 5 µm, 150 × 4.6 mm	
Mobile phase	(A) 0.1% formic acid (B) Acetonitrile
Isocratic	15:85
Flow rate	1 mL/min
Detection	UV, 200 nm
Temperature	25 °C
Analytes	1. Linolenic acid 2. Linoleic acid

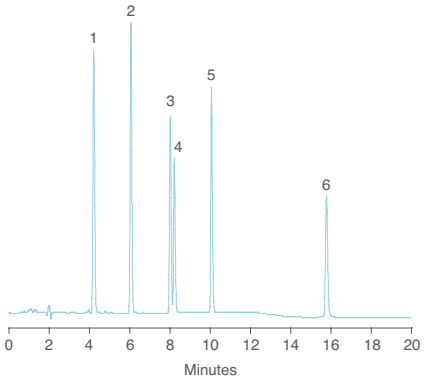
Environmental

Triazines and uron herbicides



Hypersil GOLD C8 column, 5 µm, 150 × 4.6 mm		
Mobile phase	(A) Water (B) Acetonitrile	
Gradient	Time (min) / % B 0 / 20 15 / 23 25 / 75	
Flow rate	1.5 mL/min	
Detection	UV, 240 nm	
Temperature	25 °C	
Analytes	1. Simazine 2. Monuron 3. Chlorotoluron 4. Atrazine	5. Diuron 6. Propazine 7. Linuron

Phthalates

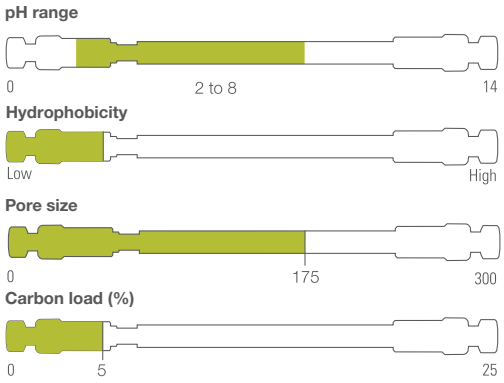


Hypersil GOLD C8 column, 5 µm, 150 × 4.6 mm	
Mobile phase	(A) Water (B) Acetonitrile
Gradient	60–90% B in 10 min; hold 10 min
Flow rate	1 mL/min
Detection	UV, 254 nm
Temperature	25 °C
Analytes	1. Dimethyl phthalate 2. Diethyl phthalate 3. Dipropyl phthalate 4. Diisopropyl phthalate 5. Di-n-butyl phthalate 6. Di-n-octyl phthalate

Hypersil GOLD C4 columns

Enhanced resolution, efficiency, sensitivity and speed

- Analytes with high hydrophobicity
- When a less hydrophobic phase is required to obtain adequate retention



Particle size 1.9 µm, 3 µm, 5 µm **USP** L26

Lower hydrophobicity for faster separations

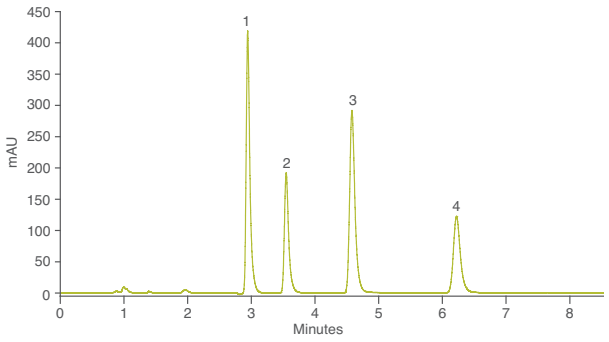
Hypersil GOLD C4 columns provide similar selectivity to C18 and C8 columns but with less retention. The shorter chain length and lower hydrophobic character make C4 a particularly useful stationary phase for the retention and separation of hydrophobic polypeptides and proteins.

Excellent peak shape, showing high-efficiency and outstanding sensitivity

Based on the same highly pure silica, Hypersil GOLD C4 columns deliver excellent peak shape. For high speed, high efficiency separations, Hypersil GOLD C4 columns are available with 1.9 µm particle size.

Pharmaceutical

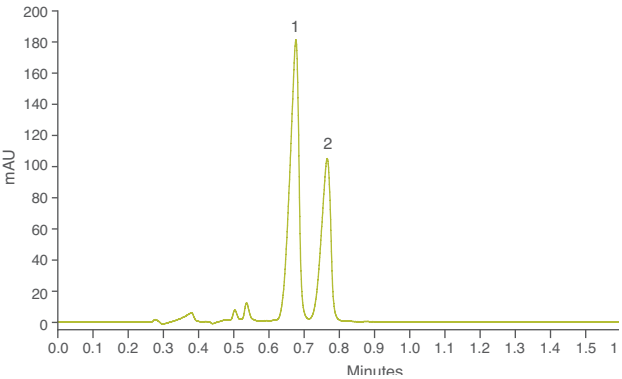
Parabens



Hypersil GOLD C4 column, 5 µm, 150 × 4.6 mm	
Mobile phase	Water/acetonitrile (50:50)
Flow rate	1.0 mL/min
Injection volume	10 µL
Detection	214 nm
Temperature	25 °C
Analytes	1. Methylparaben 2. Ethylparaben 3. Propylparaben 4. Butylparaben

Food safety

Fatty acids

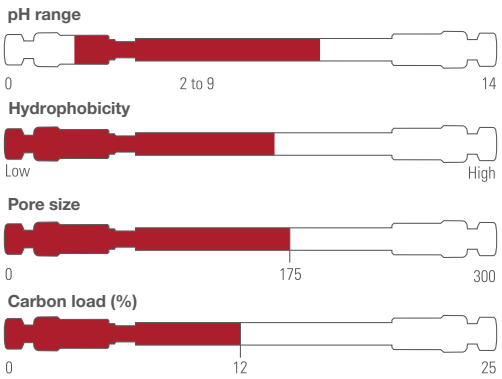


Hypersil GOLD C4 column, 1.9 µm, 100 × 2.1 mm	
Mobile phase	Water/acetonitrile (20:80)
Flow rate	0.55 mL/min
Injection volume	10 µL
Detection	200 nm
Temperature	30 °C
Analytes	1. Linolenic acid 2. Linoleic acid

Hypersil GOLD aQ columns

Enhanced retention and resolution of polar analytes

- Analysis of water soluble vitamins and organic acids
- Use with highly aqueous mobile phase



Particle size 1.9 µm, 3 µm, 5 µm **USP** L1

Retention and resolution of polar analytes

Because Hypersil GOLD aQ columns are packed with a polar endcapped C18 phase, they offer superior retention of polar compounds. Dispersive interactions are the primary mechanism of retention with alkyl chain bonded phases. The polar functional group used to endcap Hypersil GOLD aQ media provides an additional controlled interaction mechanism by which polar compounds can be retained and resolved. The resulting optimized peak shape provides excellent resolution sensitivity and efficiency, making Hypersil GOLD aQ columns ideal for the quantitative analysis of trace levels of polar analytes.

Polar endcapped C18 stationary phase for alternative selectivity

The additional interaction mechanism often provides selectivity differences over the traditional alkyl chain chemistries, and offers a solution for the separation of polar compounds which exhibit insufficient retention on pure alkyl chain phases under typical reversed-phase mobile phase conditions.

Ideal for highly aqueous mobile phases

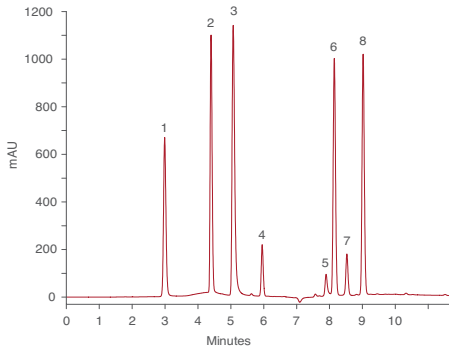
The wettability of reversed-phase media can be increased by the introduction of polar functional groups. The polar endcapping of Hypersil GOLD aQ media also makes it usable in 100% aqueous mobile phases without the risk of loss of performance or poor stability.

Excellent peak shapes

Hypersil GOLD aQ silica ensures optimized peak shape, resolution, sensitivity and efficiency. Hypersil GOLD aQ columns provide only controlled secondary interactions to ensure excellent peak shape for all analyte types, making them ideal for the quantitative analysis of trace levels of polar analytes.

Food safety

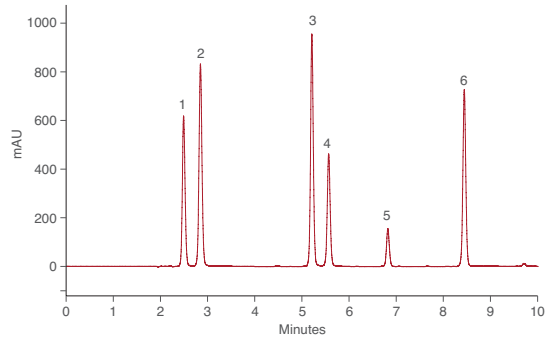
Water soluble vitamins



Hypersil GOLD aQ column, 5 µm, 150 × 4.6 mm		
Mobile phase	(A) 50 mM monopotassium phosphate pH 3.5 (B) Methanol	
Gradient	0–100% B in 15 min	
Flow rate	1 mL/min	
Detection	UV, 205 nm	
Temperature	25 °C	
Analytes	1. Vitamin B1 (thiamine) 2. Vitamin B6 (pyridoxine) 3. Vitamin B3 (nicotinamde) 4. Vitamin B5 (pantothenic acid) 5. Folic acid	6. Vitamin B12 (cyanocobalamin) 7. Vitamin H (biotin) 8. Vitamin B2 (riboflavin)

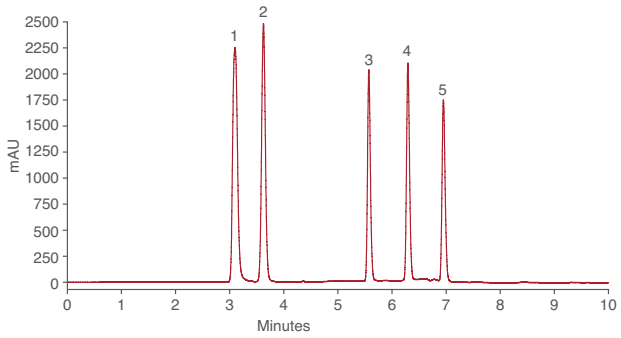
Pharmaceutical

Sulfonamides



Hypersil GOLD aQ column, 5 µm, 150 × 4.6 mm		
Mobile phase	(A) 0.1% formic acid (B) Acetonitrile + 0.1% formic acid	
Gradient	0–100% B in 15 min	
Flow rate	1.0 mL/min	
Detection	UV, 270 nm	
Temperature	30 °C	
Analytes	1. Sulfaguanidine 2. Sulfanilamide 3. Sulfathiazole	4. Sulfamerazine 5. Sulfamonomethoxine 6. Sulfaquinoxaline

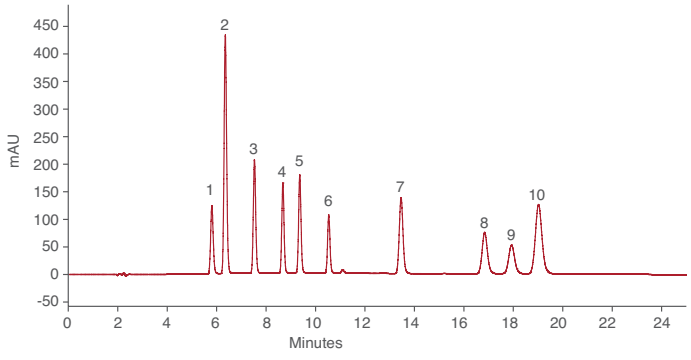
Xanthines



Hypersil GOLD aQ column, 5 µm, 150 × 4.6 mm		
Mobile phase	(A) 50 mM monosodium phosphate pH 2.5 (B) Methanol	
Gradient	1–100% B in 10 min	
Flow rate	1 mL/min	
Detection	UV, 254 nm	
Temperature	30 °C	
Analytes	1. Hypoxanthine 2. Xanthine 3. Theobromine	4. Theophylline 5. Caffeine

Biochemical

PTH amino acids

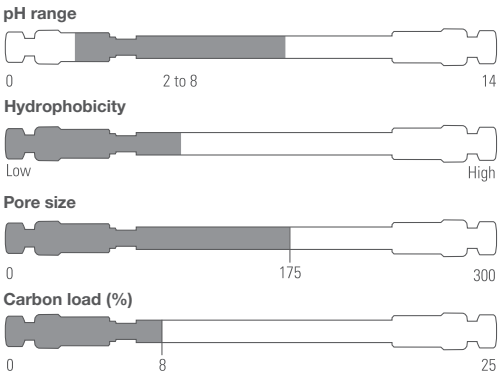


Hypersil GOLD aQ column, 5 µm, 150 × 4.6 mm		
Mobile phase	(A) 0.1% tetrahydrofuran + 0.015% triethylamine in water (B) 0.1% tetrahydrofuran + 0.015% triethylamine in acetonitrile	
Gradient	Time (min) 0 2 7 20	% B 17 20 35 35
Flow rate	1 mL/min	
Detection	UV, 269 nm	
Temperature	25 °C	
Analytes	1. Serine 2. Asparagine 3. Aspartic acid 4. Glutamic acid 5. Alanine	6. Tyrosine 7. Methionine 8. Tryptophan 9. Phenylanaline 10. Leucine

Hypersil GOLD PFP columns

Unique selectivity with perfluorinated columns

- Analyzing difficult to resolve mixtures of halogenated compounds
- Non-halogenated polar aromatic compounds
- Analysis of complex taxane samples



Particle size 1.9 µm, 3 µm, 5 µm **USP** L43

Alternative selectivity to C18 with excellent peak shape and sensitivity

Hypersil GOLD PFP (pentafluorophenyl) columns build on the performance of Hypersil GOLD silica by providing excellent peak shapes while also offering alternative selectivity in reversed-phase chromatography compared to alkyl chain phases. The Hypersil GOLD PFP manufacturing process provides improvements in speed of analysis, peak shape and sensitivity over other fluorinated phases.

Extra retention for halogenated species

Introduction of fluorine groups into the stationary phase causes significant changes in solute-stationary phase interactions. This can lead to extra retention and selectivity for positional isomers of halogenated compounds.

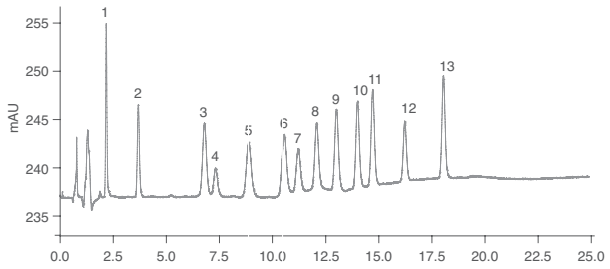
Unique selectivity for non-halogenated polar compounds

Hypersil GOLD PFP Columns are also well suited to the selective analysis of non-halogenated compounds, in particular polar compounds containing hydroxyl, carboxyl, nitro, or other polar groups. High selectivity is often most apparent when the functional groups are located on an aromatic or other rigid ring system.

Hypersil GOLD PFP	Hypersil GOLD PFP columns are particularly suited to the analysis of compounds containing substituted aromatic rings. This is because the fluorine atoms around the phenyl ring enhance pi-pi interactions increasing retention and selectivity.

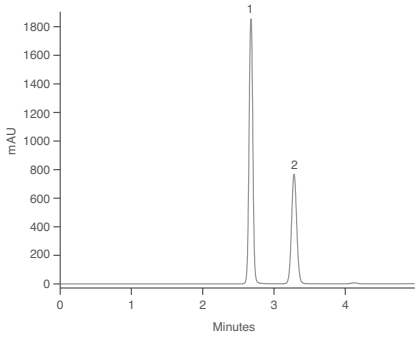
Pharmaceutical

Taxanes



Hypersil GOLD PFP column, 5 µm, 150 × 4.6 mm		
Mobile phase	(A) Water (B) Methanol/acetonitrile (7:93)	
Gradient	Time (min)	% B
	0	35
	7	35
	25	58
Flow rate	1.5 mL/min	
Detection	UV, 220 nm	
Temperature	25 °C	
Analytes	1. 10 -Deacetyl baccatin 2. Baccatin III 3. 10-Deacetyl-7-xylosyl taxol B 4. Taxinine M 5. 10-Deacetyl-7-xylosyl taxol 6. 10-Deacetyl taxol 7. 10-Deacetyl-7-xylosyl taxol C	8. 7-Xylosyl taxol 9. Cephalomanine 10. 10-Deacetyl-7epitaxol 11. Paclitaxol 12. Taxol C 13. 7-Epitaxol

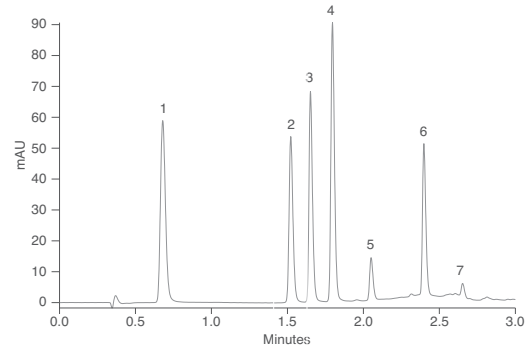
Fluorinated nucleic bases



Hypersil GOLD PFP column, 5 µm, 150 × 4.6 mm	
Mobile phase	Water + 0.1% tetrahydrofuran
Flow rate	1.0 mL/min
Detection	UV, 220 nm
Temperature	30 °C
Analytes	1. Fluorocytosine 2. Fluorouracil

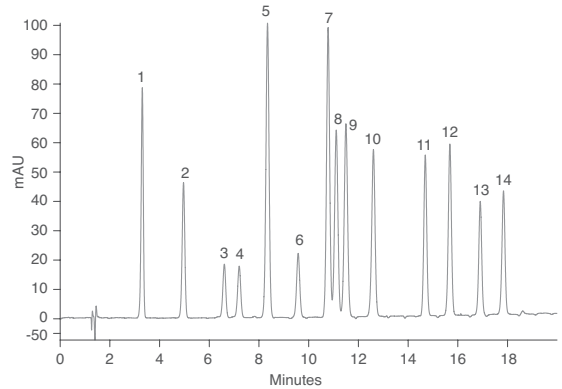
Environmental

Banned aromatic amines



Hypersil GOLD PFP column, 1.9 µm, 50 × 2.1 mm		
Mobile phase	(A) 25 mM ammonium acetate pH 5.0 (B) Acetonitrile	
Gradient	10–100% B in 3 mins	
Flow rate	0.5 mL/min	
Detection	UV, 254 nm (2 µL flow cell)	
Temperature	40 °C	
Analytes	1. 2,4-Diaminotoluene 2. o-Toluidine 3. 4,4-Oxydianiline 4. 2-Methoxy-5-Methylaniline	5. 2,4,5-Trimethylaniline 6. 4,4-Methylene-bis (2-chloroaniline) 7. Impurity from analyte no. 6

Phenolic positional isomers

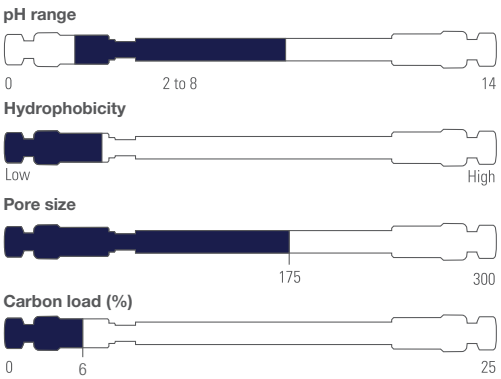


Hypersil GOLD PFP column, 5 µm, 150 × 4.6 mm		
Mobile phase	(A) Water + 0.1% formic acid (B) Acetonitrile + 1.0% formic acid	
Gradient	15–45% B in 20 mins	
Flow rate	1.5 mL/min	
Injection volume	5 µm	
Detection	UV, 270 nm	
Temperature	25°C	
Analytes	1. 3,4-Dimethoxyphenol 2. 2,6-Dimethoxyphenol 3. 2,6-Difluorophenol 4. 3,5-Dimethoxyphenol 5. 2,4-Difluorophenol 6. 2,3-Difluorophenol 7. 3,4-Difluorophenol	8. 3,5-Dimethoxyphenol 9. 2,6-Dimethoxyphenol 10. 2,6-Dichlorophenol 11. 4-Chloro-3-Methylphenol 12. 3,4-Dichlorophenol 13. 4-Chloro-2-Methylphenol 14. 3,5-Dichlorophenol

Hypersil GOLD CN columns

Cyano columns for reversed and normal-phase separations

- Analyzing difficult to resolve mixtures of halogenated compounds
- Non-halogenated polar aromatic compounds
- Analysis of complex taxane samples



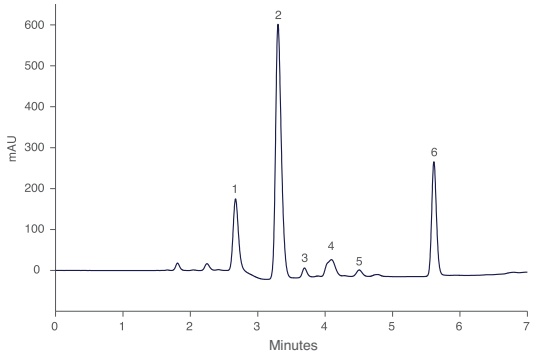
Particle size 1.9 µm, 3 µm, 5 µm **USP** L10

Alternative selectivity with lower hydrophobicity than C18

Hypersil GOLD CN columns offer alternative selectivity in reversed-phase chromatography with lower hydrophobicity compared to C18 alkyl chain phases. Hypersil GOLD CN columns can also be used in normal-phase chromatography, where they offer less retention and different selectivity compared to silica columns.

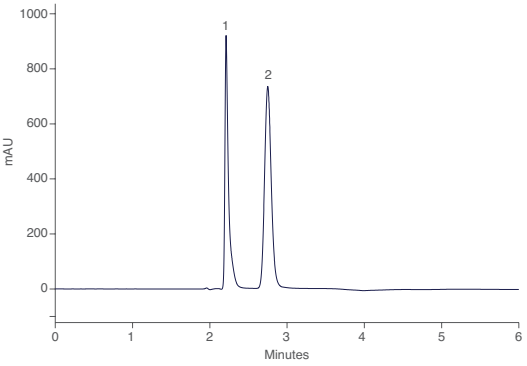
Pharmaceutical

Penicillins



Hypersil GOLD CN column, 5 µm, 150 × 4.6 mm		
Mobile phase	(A) 10 mM potassium phosphate pH3 (B) Acetonitrile	
Gradient	Time (min)	% B
	0	0
	1	10
	8	70
Flow rate	1.25 mL/min	
Detection	UV, 220 nm	
Temperature	25 °C	
Analytes	1. N-acetyl penicillamine 2. Ampicillin 3,4,5. Impurities from penicillin G 6. Penicillin G	

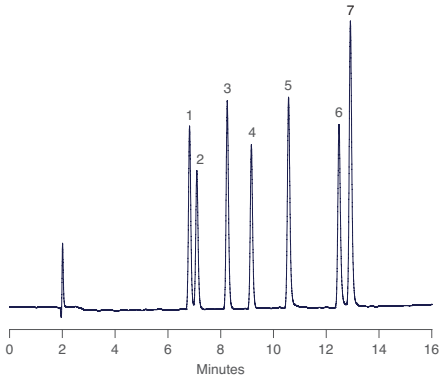
TB drugs



Hypersil GOLD CN column, 5 µm, 150 × 4.6 mm		
Mobile phase	(A) 20 mM ammonium formate pH3 (B) Acetonitrile	
Gradient	Time (min)	% B
	0	0
	15	20
Flow rate	1.0 mL/min	
Detection	UV, 254 nm	
Temperature	25 °C	
Analytes	1. Isoniazid 2. Pyrazinamide	

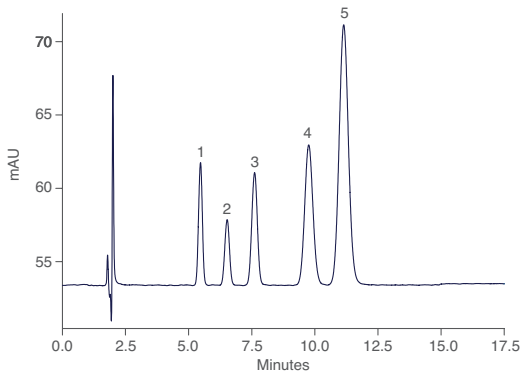
Toxicology

Steroids



Hypersil GOLD CN column, 5 µm, 150 × 4.6 mm		
Mobile phase	(A) Water (B) Acetonitrile	
Gradient	Time (min)	% B
	0	10
	15	50
Flow rate	1.5 mL/min	
Detection	UV, 254 nm	
Temperature	25 °C	
Analytes	1. Hydrocortisone 2. Cortisone 3. Corticosterone 4. 11-α hydroxprogesterone 5. 17-α Hydroxprogesterone 6. Progesterone 7. Deoxycorticosterone	

Organic acids

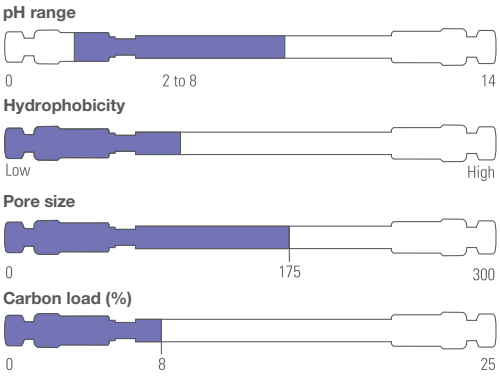


Hypersil GOLD CN column, 5 µm, 150 × 4.6 mm	
Mobile phase	(A) 25 mM potassium phosphate pH2 (B) Methanol
Isocratic	95% A: 5% B
Flow rate	1.5 mL/min
Detection	UV, 254 nm
Temperature	25 °C
Analytes	1. 4-Fluorobenzoic 2. o-Toluic acid 3. p-Toluic acid 4. 2,4,6-Trimethylbenzoic acid 5. 2,5-Dimethylbenzoic acid

Hypersil GOLD Phenyl columns

Excellent retention and unique selectivity for aromatic analytes

- Analyte mixtures with varying polarity and aromaticity
- Where alternative selectivity to C18 is required



Particle size 1.9 µm, 3 µm, 5 µm **USP** L11

Alternative selectivity for aromatic and moderately polar analytes

Hypersil GOLD Phenyl reversed-phase HPLC columns exhibit alternative selectivity to alkyl chain columns, particularly for aromatic and moderately polar analytes.

Enhanced pi-pi interactions with aromatics

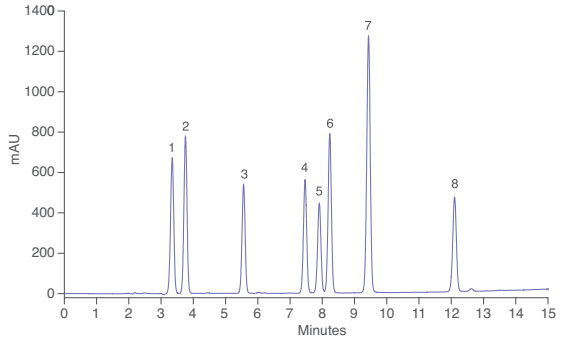
Many phenyl phases use a propyl (C3) linker between the silica and the phenyl ring. The Hypersil GOLD Phenyl bonded phase contains a butyl (C4) linker which allows for superior alignment of the phenyl ring with aromatic molecules, enhancing pi-pi interactions and therefore their retention.

Moderate hydrophobicity

The C4 linker also provides the stationary phase with moderate hydrophobicity, making it ideal for the separation of analyte mixtures with varying polarity and aromaticity.

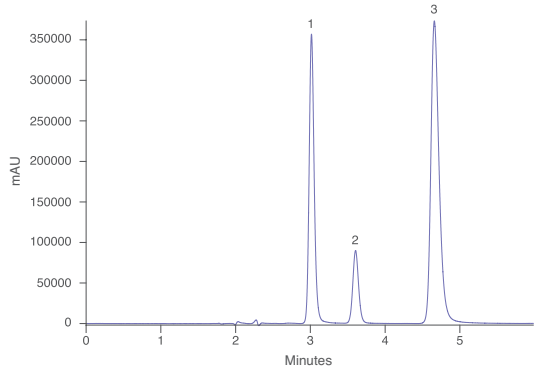
Pharmaceutical

Antibacterials



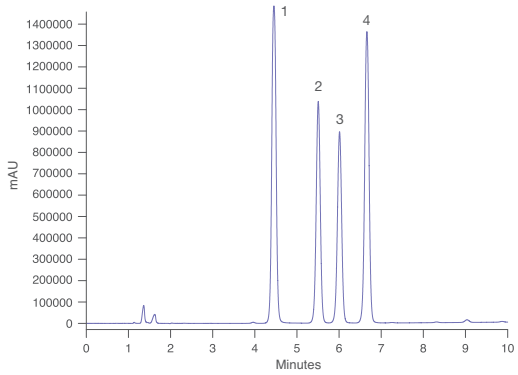
Hypersil GOLD Phenyl column, 5 µm,150 × 4.6 mm		
Mobile phase	(A) 20 mM potassiumn phosphate pH 2.5 (B) Acetonitrile	
Gradient	20–50% B in 15 min	
Injection volume	5 µL	
Flow rate	1 mL/min	
Detection	UV, 254 nm	
Temperature	30 °C	
Analytes	1. Carbadox 2. Thiamphenicol 3. Furazolidone 4. Oxolinic acid	5. Sulfadimethoxine 6. Sulfaquinoxaline 7. Nalidixic acid 8. Piromidic acid

Antacids



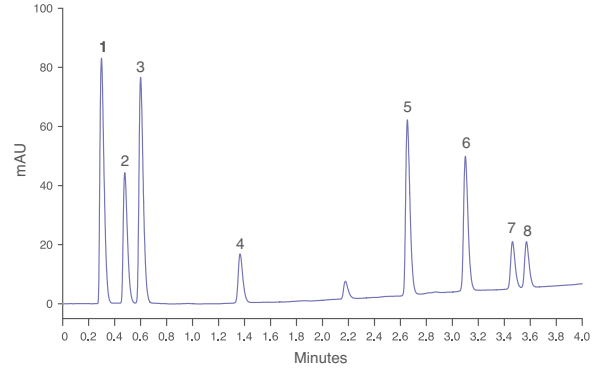
Hypersil GOLD Phenyl column, 5 µm, 150 × 4.6 mm	
Mobile phase	20 mM potassium phosphate pH 7.0/acetonitrile (80/20)
Injection volume	5 µL
Flow rate	1 mL/min
Detection	UV, 254 nm
Temperature	25 °C
Analytes	1. Famotidine 2. Cimetidine 3. Ranitidine

Veterinary drug coccidiostats



Hypersil GOLD Phenyl column, 5 µm, 150 × 4.6 mm	
Mobile phase	(A) Water (B) Methanol
Gradient	40–70% B in 10 min
Injection volume	5 µL
Flow rate	1 mL/min
Detection	UV, 260 nm
Temperature	25 °C
Analytes	1. 4-amino-3,5-dinitrobenzamide 2. Zoalene (3,5-nitro-o-toluamide) 3. Nitromid (3,5-dinitrobenzamide) 4. Ethopabate

Antidepressants

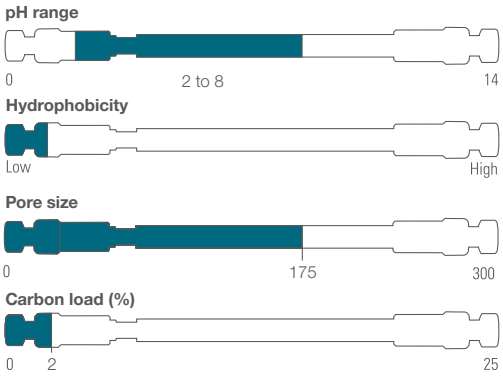


Hypersil GOLD Phenyl column, 1.9 µm, 50 × 2.1 mm		
Mobile phase	(A) 0.1% formic acid (B) 0.1% formic acid in acetonitrile	
Gradient	10–60% B in 3.4 min 60–90% B in 0.24 min	
Injection volume	0.7 µL	
Flow rate	0.5 mL/min	
Detection	UV, 225 nm and 254 nm	
Temperature	60 °C	
Analytes	1. Uracil 2. Acetaminophen 3. p-Hydroxybenzoic acid 4. o-Hydroxybenzoic acid	5. Oxazepam 6. Diazepam 7. Di-isopropyl phthalate 8. Di-n-propyl phthalate

Hypersil GOLD Amino columns

Highly versatile aminopropyl stationary phase

- Retains anions and organic acids in weak anion-exchange
- Excellent for carbohydrate analysis in HILIC



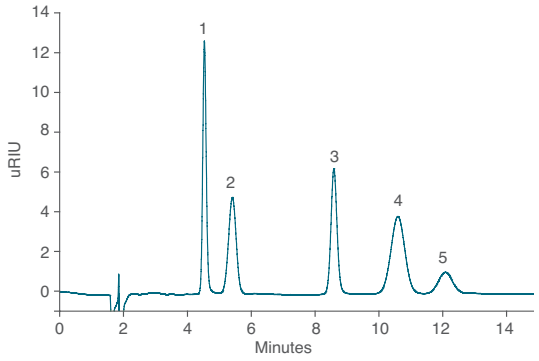
Particle size 1.9 µm, 3 µm, 5 µm **USP** L8

Outstanding peak shape and sensitivity

Based on the same highly pure silica backbone, Hypersil GOLD Amino columns offer improved peak shape over type A silica columns. For high speed, high efficiency separations, Hypersil GOLD Amino columns are available with 1.9 µm particle size.

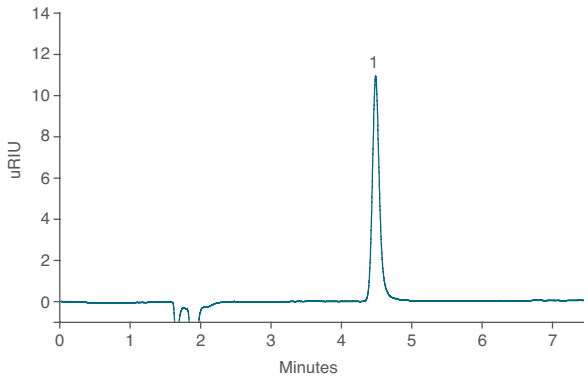
Food safety

Sugars



Hypersil GOLD Amino column, 5 µm, 150 × 4.6 mm	
Mobile phase	Acetonitrile/water (80:20)
Injection volume	20 µL
Flow rate	1.2 mL/min
Detection	RI
Temperature	35 °C
Analytes	1. Fructose 2. Glucose 3. Sucrose 4. Maltose 5. Lactose

Sorbitol

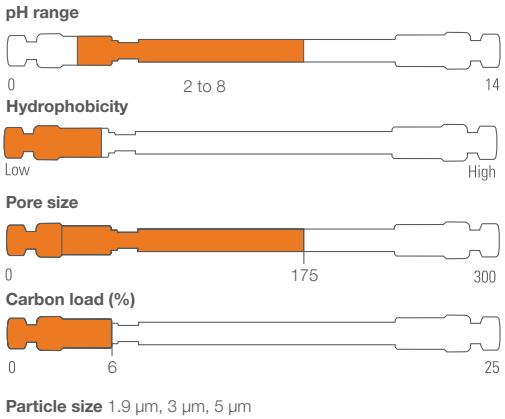


Hypersil GOLD Amino column, 5 µm, 150 × 4.6 mm	
Mobile phase	Acetonitrile/water (80:20)
Injection volume	20 µL
Flow rate	1.2 mL/min
Detection	RI
Temperature	35 °C
Analyte	Sorbitol

Hypersil GOLD AX columns

Separation of anionic species and polar molecules

- Smaller proteins and peptides
- Anionic species
- Polar molecules



Particle size 1.9 µm, 3 µm, 5 µm

Weak anion-exchange AX phase

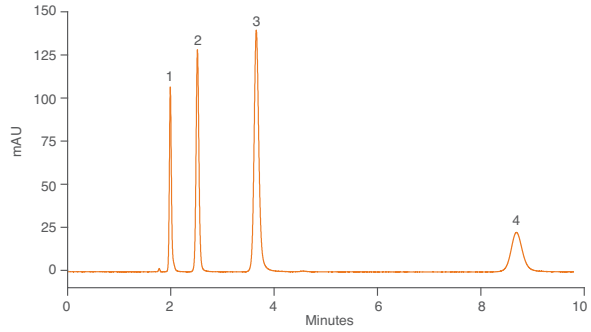
Hypersil GOLD AX columns utilze a novel polymeric amine ligand bonded to highly pure base deactivated silica. The silica substrate brings higher efficiency than polymer based ion-exchange columns.

Suitable for HILIC

Hypersil GOLD AX columns are particularly suited to the analysis of polar compounds in HILIC applications. For high speed, high efficiency separations, Hypersil GOLD AX columns are available with 1.9 µm particle size.

Biopharma

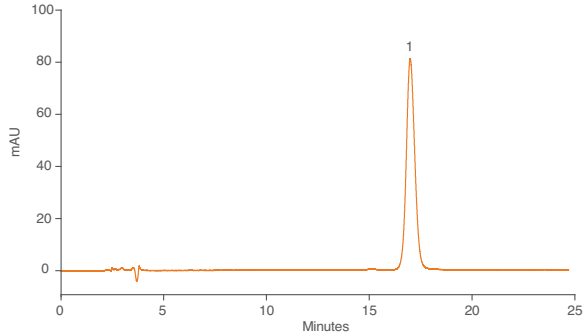
Monophosphates



Hypersil GOLD AX column, 5 µm, 150 × 4.6 mm	
Mobile phase	Aqueous phosphate buffer (50 mM, pH 3)
Flow rate	1.0 mL/min
Injection volume	10 µL
Detection	UV, 254 nm
Temperature	40 °C
Analytes	1. Uracil 2. Cytidine-5'-monophosphate 3. Adenosine-5'-monophosphate 4. Guanosine-5'-monophosphate

Food safety

Vitamin C

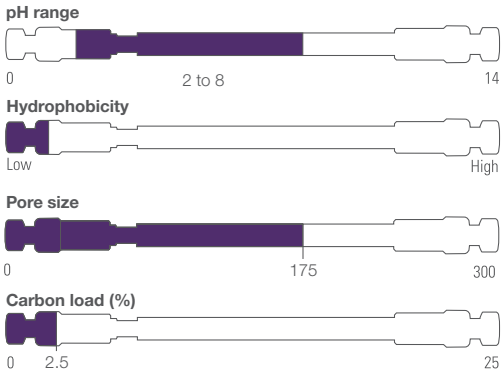


Hypersil GOLD AX column, 5 µm, 100 × 4.6 mm	
Mobile phase	100 mM ammonium acetate pH 6.8/acetonitrile (30:70)
Flow rate	0.5 mL/min
Injection volume	50 µL
Detection	UV, 240 nm
Temperature	30 °C
Analyte	Vitamin C

Hypersil GOLD SAX columns

Quaternary amine strong anion-exchange SAX column

- Smaller organic molecules
- Ionic species



Particle size 1.9 µm, 3 µm, 5 µm **USP** L14

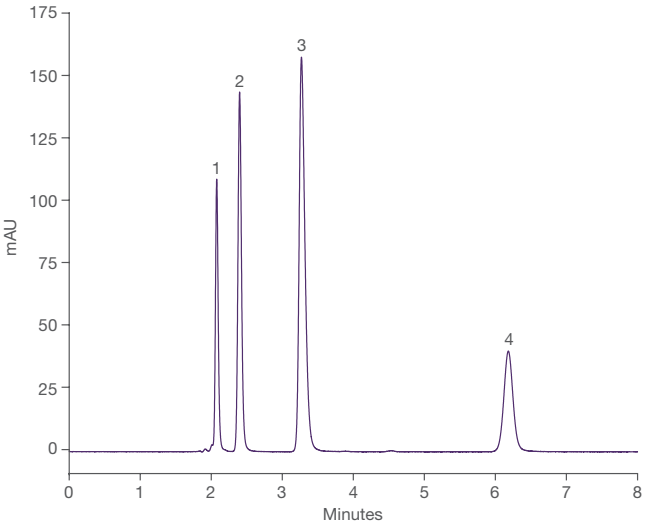
High stability to aqueous mobile phase

Hypersil GOLD SAX stationary phase utilizes a highly stable quaternary amine strong anion-exchange ligand bonded to highly pure silica. Hypersil GOLD SAX columns are suited to the analysis of smaller organic molecules such as nucleotides and organic acids using aqueous and low pH mobile phases.

Outstanding peak shape and sensitivity

Based on the same highly pure silica backbone, Hypersil GOLD SAX columns offer improved peak shape over type A silica columns. For high speed, high efficiency separations, Hypersil GOLD SAX columns are available with 1.9 µm particle size.

Biopharma
Monophosphates

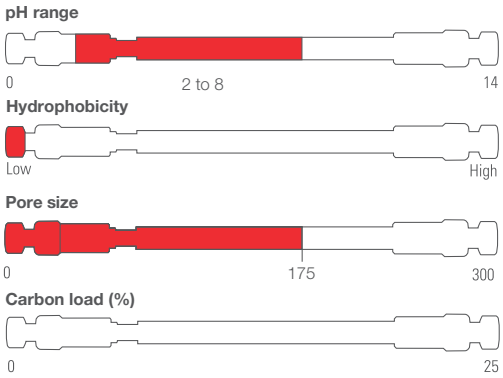


Hypersil GOLD SAX column, 5 µm, 150 × 4.6 mm		
Mobile phase	50 mM phosphate buffer pH 3.0	
Flow rate	1.0 mL/min	
Injection volume	10 µL	
Detection	UV, 254 nm	
Temperature	40 °C	
Analytes	1. Uracil 2. Cytidine-5'-monophosphate	3. Adenosine-5'-monophosphate 4. Guanosine-5'-monophosphate

Hypersil GOLD Silica columns

Excellent peak shape in normal-phase chromatography

- Steroids in normal-phase
- Polar analytes in HILIC

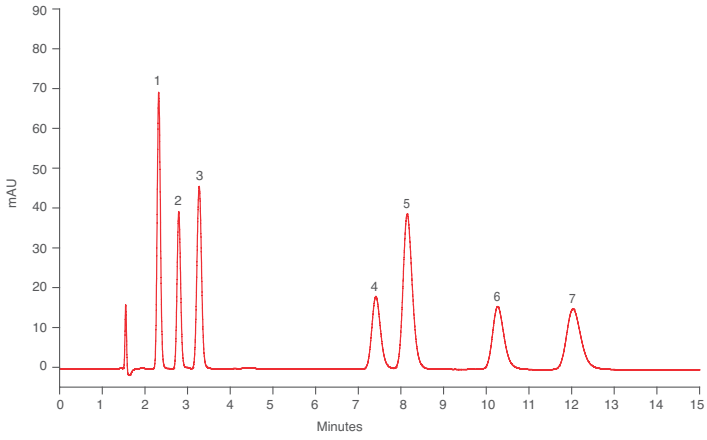


Particle size 1.9 µm, 3 µm, 5 µm **USP** L3

Outstanding peak shape and sensitivity

Unbonded, highly pure base deactivated silica media that is the backbone of the Hypersil GOLD range of columns. Hypersil GOLD Silica columns are a powerful and efficient tool for the chromatography of non-polar and moderately polar organic compounds by normal-phase chromatography. For high speed, high efficiency separations, Hypersil GOLD Silica columns are available with 1.9 µm particle size.

Forensics
Steroids

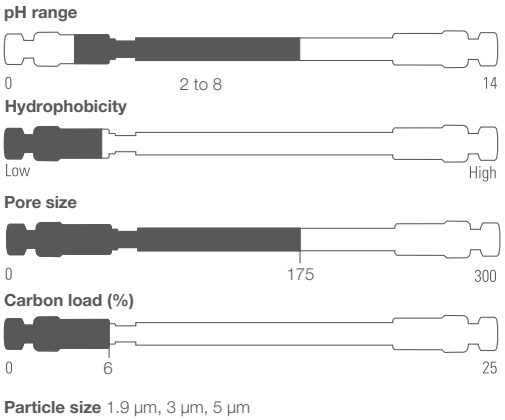


Hypersil GOLD Silica column, 5 µm, 150 × 4.6 mm		
Mobile phase	Hexane/ethanol (19:1)	
Flow rate	1.5 mL/min	
Injection volume	10 µL	
Detection	UV, 254 nm	
Temperature	30 °C	
Analytes	1. Progesterone 2. 21-Hydroxyprogesterone-21-acetate 3. 17-a-Hydroxyprogesterone 4. Cortisone	5. 11-a-Hydroxyprogesterone 6. Corticosterone 7. Hydrocortisone

Hypersil GOLD HILIC columns

Enhanced retention of polar and hydrophilic analytes

- Polar and hydrophilic compounds
- Carbohydrates
- Enhanced sensitivity in MS



Particle size 1.9 µm, 3 µm, 5 µm

Improved Sensitivity with MS Detection

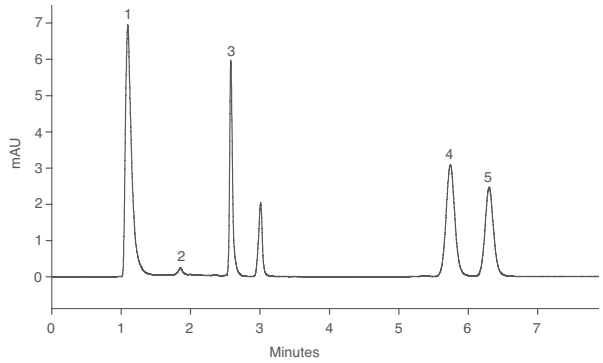
The highly organic mobile phases containing low salt levels used for HILIC, make Hypersil GOLD HILIC columns ideal for use with electrospray mass spectroscopy.

Enhanced retention of polar and hydrophilic analytes

HILIC is an increasingly popular technique offering complementary selectivity to reversed-phase. With the ability to retain highly polar and hydrophilic compounds, Hypersil GOLD HILIC columns have been developed to aid the analysis of compounds that are traditionally difficult to retain using conventional C18 columns. In HILIC, by incorporating water in the highly organic mobile phase, an adsorbed water-rich layer is formed on the polar stationary phase surface into which analyte molecules partition. Retention is governed by dipole-dipole interactions and hydrogen bonding mechanisms.

Food safety

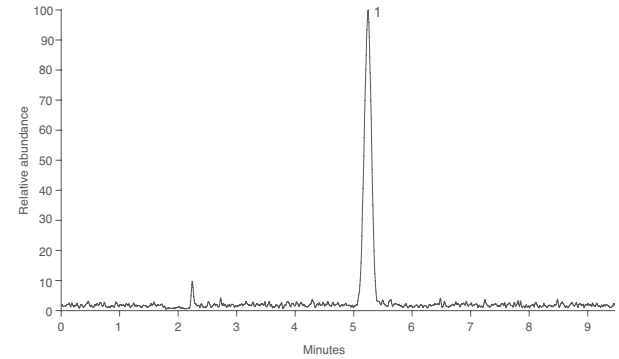
Water soluble vitamins



Hypersil GOLD HILIC column, 5 µm, 150 × 4.6 mm		
Mobile phase	Water/acetonitrile (10:90) + 0.1% formic acid	
Flow rate	1.0 mL/min	
Injection volume	10 µL	
Detection	UV, 205 nm, 230 nm, 260 nm	
Temperature	Ambient	
Analytes	1. Thiamine 2. Nicotinic acid 3. Nicotinamide	4. Pyridoxine 5. Riboflavin 6. PABA

Chemical

Urea



Hypersil GOLD HILIC column, 5 µm, 150 × 4.6 mm	
Mobile phase	Water/acetonitrile (10:90) + 0.1% formic acid
Flow rate	0.6 mL/min
Injection volume	1 µL (made up in mobile phase)
Detection	+ESI
Temperature	30 °C
Analyte	Urea

Hypersil GOLD 1.9 µm particles

The power of 1.9 µm particles

1.9 µm particles give higher efficiency than 3 µm or 5 µm particles and this efficiency is delivered over a greater range of optimum linear velocity. This makes it possible to operate at higher flow rates without losing performance. Hypersil GOLD columns, packed with 1.9 µm particles are available in the full range of functionalities and formats. Additionally, for special ultra-high-pressure requirements, we recommend Thermo Scientific™ Vanquish™ columns, packed with 1.9 µm particles and designed for extended pressure capabilites and robustness. Thermo Scientific™ Hypersil™ GOLD aQ Javelin HTS columns are available for high throughput applications; shorter columns for faster analysis and solvent savings.

Validated for Vanquish and Javelin high-throughput screening columns

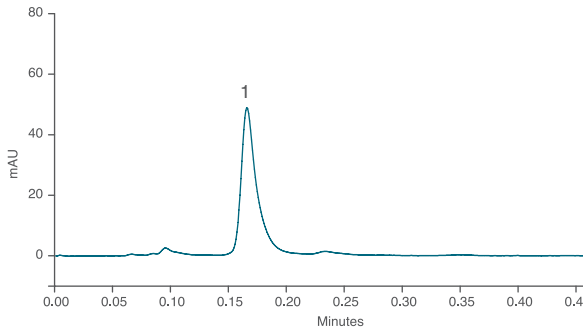
Thermo Scientific™ Vanquish™ UHPLC columns are available in 1.9 µm column format. These columns are designed to operate at higher operating back pressures and complement the Thermo Scientific™ VANQUISH™ UHPLC systems by taking advantage of its extended pressure capabilities and robustness. These columns provide better separation because of their higher efficiency and high flow rate tolerance.

Hypersil GOLD Javelin HTS 1.9 µm columns

Hypersil GOLD Javelin HTS 1.9 µm colums take fast LC to the extreme. These short 10 mm columns enable analysis times as fast as 8 seconds to be achieved. The use of ultra-low dead volume, direct connect Javelin hardware also minimizes dispersion.

Toxicology

Nandrolone



Hypersil GOLD 1.9 µm particle, 10 × 2.1 mm	
Mobile phase	Warer/acetonitrile 40/60 + 0.1% tetrahydrofuran isocratic
Flow rate	0.4 mL/min
Injection volume	0.5 µL
Detection	254 nm
Temperature	5 °C
Analyte	Nandrolone (19-Nortestosterone)

Three tips for method transfer

1. To maintain an equivalent separation when transferring a method it is important to keep the reduced linear velocity constant between the original and new method.

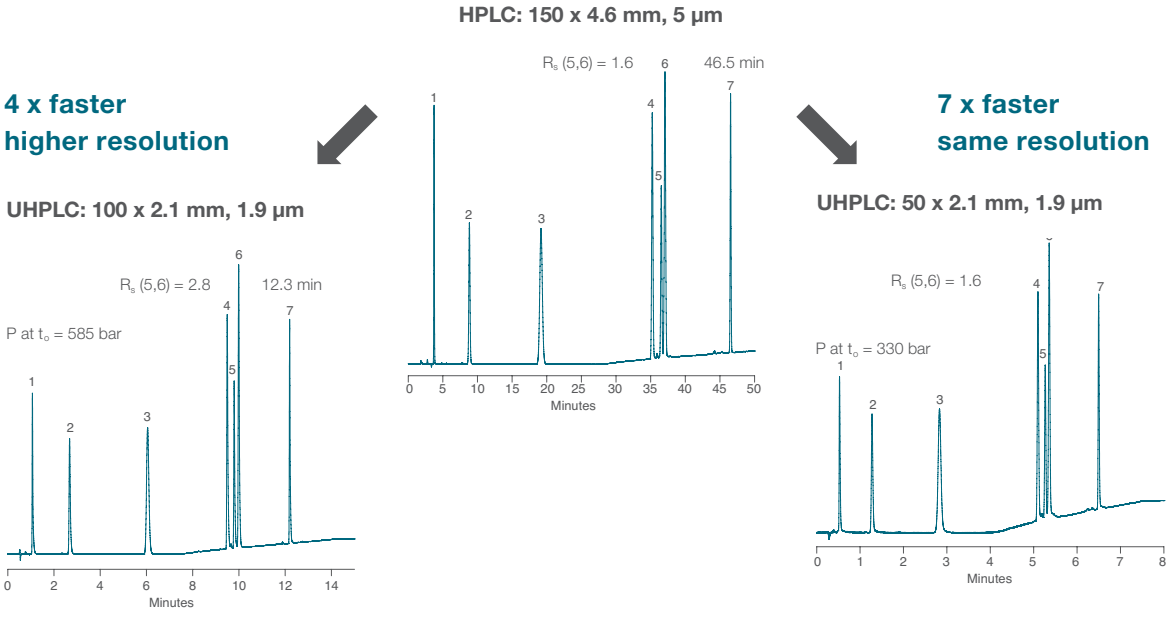
2. Sub 2 µm based methods are most often transferred to smaller volume columns, so the same injection volume will take up a larger proportion of the new column, possibly leading to band broadening. It is therefore important to scale down the injection volume to match the change in column volume.

3. Geometrical transfer of the gradient requires calculation of the number of column volumes of mobile phase in each segment (time interval) of the gradient in the original method to ensure that the new calculated gradient takes place over the same number of column volumes, for the new column.

Pressure rating of Hypersil GOLD 1.9 µm columns

Column hardware	Pressure rating
Analytical columns	1250 bar/18,000 psi
Capillary/nano columns	400 bar/6,000 psi
Javelin HTS columns	400 bar/6,000 psi

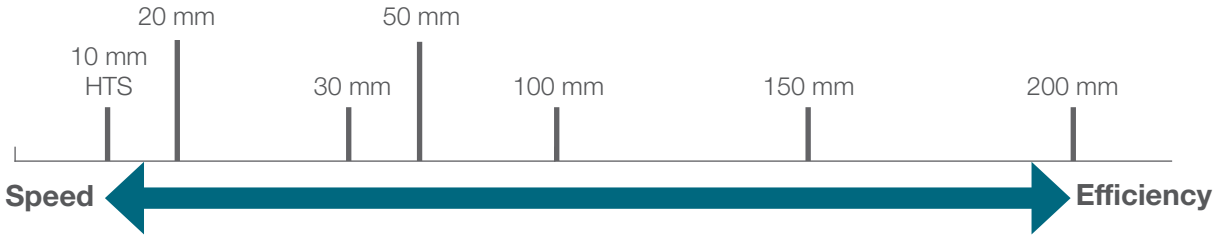
Transferring a method using these tips can give results as shown below for the separation of Ibuprofen and impurities.



Which 1.9 µm column?

We offer an extensive range of columns packed with 1.9 µm particles to suit the full variety of application needs. The choice of column will depend upon the requirement of the analysis.

- Speed: choose from 10 mm Javelin HTS column, 20, 30 or 50 mm long analytical columns
- Efficiency: choose a longer column (for example 150 or 200 mm)
- Low backpressure: Hypersil GOLD 1.9 µm media is packed into a high pressure column 50 mm long and 4.6 mm internal diameter. Traditionally, a 1.9 µm column is used on UHPLC instruments. However, by producing less backpressure, this new wider column is suitable for users of conventional systems where pressure limits are often in the 6000 psi/400 bar region, ensuring fast chromatography without the need for extensive instrument optimization.



System considerations

With 1.9 µm particles, analyses can be performed with a high linear velocity through the column without loss in performance, provided the LC system is optimized to operate under these conditions. In order to produce fast, efficient chromatography, all system components for the assay should also be considered. Modern UHPLC instruments, including the VANQUISH UHPLC system, will take account of these factors.

There are three major system considerations to remember when using short columns packed with 1.9 µm particles.

1. The system volume (connecting tubing ID and length, injection volume, UV detector flow cell volume) must be minimized
2. The detector time constant and sampling rate need to be carefully selected
3. When running fast gradients pump delay volume needs to be minimal.

Columns for high throughput screening

Javelin HTS columns are specifically designed for high throughput applications. Using finger tight fittings and low dead volume hardware to minimize band broadening, these columns are ideal for ballistic gradients, providing enough retention and sensitivity for very fast assays. Javelin HTS columns are available in multipacks for a cost effective solution.

Javelin HTS column

Description	Particle size	Length (mm)	ID (mm)	Cat. no.
Hypersil GOLD Javelin HTS column (3/pk)	1.9	10	2.1	25002-012135
	5	10	4.0	25005-014006

Validated for Vanquish Hypersil GOLD columns

Better, faster, easier UHPLC separation

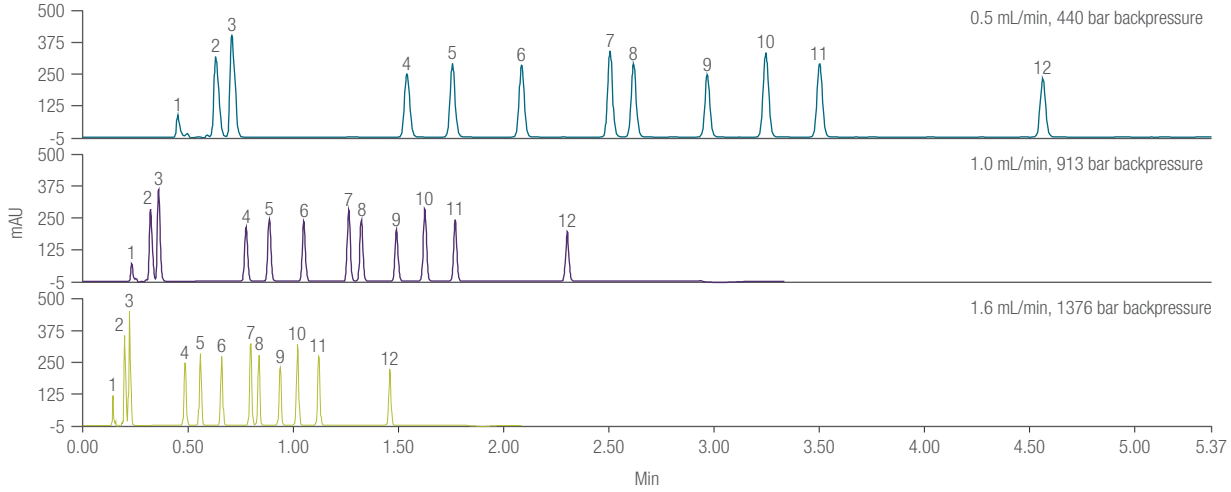
Hypersil GOLD columns are available in the Vanquish UHPLC high pressure configuration, designed for very high efficiency separations. These reversed-phase columns were developed in conjunction with the Vanquish UHPLC system to take advantage of the system's extended pressure capabilities and robustness. The result is a high level of separation, speed and throughput that solve analytical challenges of analyzing complex matrices using LC and LC-MS.

Columns	Particle size (µm)	Length (mm)	ID (mm)	Cat. no.
Hypersil GOLD VANQUISH	1.9	50	2.1	25002-052130-V
		100		25002-102130-V
		150		25002-152130-V
		200		25002-202130-V
Hypersil GOLD VANQUISH aQ	1.9	100	2.1	25302-102130-V
		150		25302-152130-V
		200		25302-202130-V
Hypersil GOLD VANQUISH PFP	1.9	100	2.1	25402-102130-V
		150		25402-152130-V
		200		25402-202130-V

Rapid screening of sulfa drugs

Hypersil GOLD aQ Vanquish column, 1.9 µm, 100 × 2.1 mm		
Mobile phase	(A) 0.1% formic acid in water (B) 0.1% formic acid in acetonitrile	
Flow rate	1.0 mL/min	
Injection volume	1 µL	
Detection	UV, 260 nm	
Temperature	55 °C, still air with eluent pre-heating	
Analytes *(10 µg/mL of each of the following components in acetonitrile)*	1. naphthalene 2. acenaphthylene 3. acenaphthene 4. fluorene 5. phenanthrene 6. anthracene 7. fluoranthene 8. pyrene	9. benzo(a)anthracene 10. chrysene 11. benzo(b)fluoranthene 12. benzo(k)fluoranthene 13. benzo(a)pyrene 14. dibenzo(a,h)anthracene 15. benzo(ghi)perylene 16. indeno(1,2,3-cd)pyrene

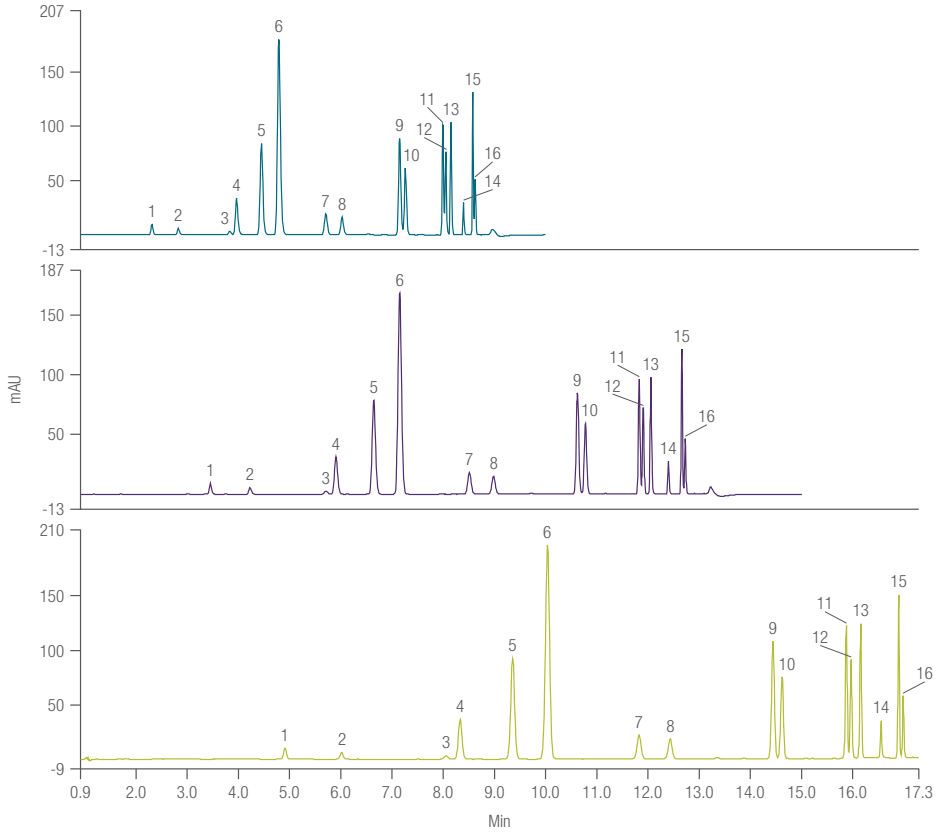
Flow rate (mL/min)	0.5	1.0	1.6
%B	Time (min)		
5	0	0	0
30	4.667	2.333	1.458
30	5.000	2.500	1.563
5	5.067	2.533	1.583
5	6.667	3.333	2.083
Maximum backpressure (bar)	440	913	1376



PAH analysis on different length Hypersil GOLD VANQUISH UHPLC columns

Hypersil GOLD aQ VANQUISH column, 1.9 µm, 100 × 2.1 mm		
Mobile phase	(A) Methanol/water (50:50 v/v) (B) Acetonitrile	
Flow rate	500 µL/min	
Injection volume	1 µL	
Detection	UV, 254 nm	
Temperature	30 °C for non-linear gradient, still air with eluent pre-heating	
Analytes	1. Sulfanilic acid 2. Sulfaguanidine 3. Sulfanilamide 4. Sulfadiazine 5. Sulfathiazole 6. Sulfamerazine	7. Sulfamethizole 8. Sulfadimidine 9. Sulfamonomethoxine 10. Sulfamethoxazole 11. Sulfadoxin 12. Sulfaquinoxaline

Time	%B	Curve
0	20	5
0.3	20	5
8	100	8
8.1	20	5
10	20	5



Comparison of PAH analysis on different length Hypersil GOLD VANQUISH UHPLC columns
Upper trace: 100 mm column – max backpressure 815 bar
Middle trace: 150 mm column – max backpressure 1115 bar
Lower trace: 200 mm column – max backpressure 1370 bar

Preparative columns

Analytical methods may require scale up to preparative sizes to isolate and purify compounds from mixtures. In choosing the best column and packing material for your preparative application, consider:

- Selectivity
- Loadability of the media
- Column dimensions

We have established a strong reputation for the manufacture and supply of high quality preparative columns, designed to give the same levels of performance and reproducibility as our popular analytical columns. Scale up is easiest when starting from an analytical column packed with smaller particle size media offering the same selectivity as the larger particle size preparative media. Hypersil GOLD phases are offered in various sizes to complement lab scale operations and facilitate the scale up to preparative chromatography.

Learn more for ordering details on Hypersil GOLD preparative columns at **thermofisher.com/prepLC**

Column protection

Guard columns

Drop-in guard cartridges and holders offer convenience, economy, and effective protection for extending analytical column lifetimes. The 10 mm design offers maximum protection with minimal increase in retention. Hypersil GOLD drop-in guard cartridges are provided in packs of 4 each.

UHPLC filter

Replaceable 0.2 µm Thermo Scientific™ UHPLC filter cartridges can be used to protect Hypersil GOLD 1.9 µm columns against particulate contamination, extending column lifetime. It's low dead volume design maintains chromatographic performance without degrading peak shape and causes minimal efficiency loss through dispersion. The UHPLC filter adds minimal increase in backpressure and so can be fitted to any length column.

Description	Length (mm)	ID (mm)	Cat. no.
Thermo Scientific™ UNIGUARD™ Drop-In-Guard cartridge holder	10	1.0	851-00
		2.1	852-00
		3.0	852-00
		4.0/4.6	850-00

Description	ID (mm)	Cat. no.
UHPLC Filter Holder		27006
UHPLC Filter Cartridge, 0.2 µm (5/pk)	2.1	22180
	1.0	22185

Ordering information

Hypersil GOLD HPLC columns

Particle size	Description	Length (mm)	ID (mm)	Hypersil GOLD	Hypersil GOLD C8	Hypersil GOLD C4
1.9	UHPLC column	20	2.1	25002-022130	-	-
		30	1.0	25002-031030	-	-
			2.1	25002-032130	25202-032130	-
		50	1.0	25002-051030	-	-
			2.1	25002-052130	25202-052130	25502-052130
			3.0	25002-053030	-	-
			4.6	25002-054630	25202-054630	-
		100	1.0	25002-101030	25202-101030	-
			2.1	25002-102130	25202-102130	25502-102130
			3.0	25002-103030	25202-103030	-
		150	2.1	25002-152130	25202-152130	25502-152130
		200	2.1	25002-202130	-	-
3	Drop-in guard (4/pk)	10	1.0	25003-011001	25203-011001	25503-011001
			2.1	25003-012101	25203-012101	25503-012101
			3.0	25003-013001	25203-013001	25503-013001
			4.0/4.6	25003-014001	25203-014001	25503-014001
	HPLC column	30	2.1	25003-032130	-	-
			4.6	25003-034630	25203-034630	-
		50	2.1	25003-052130	25203-052130	25503-052130
			3.0	25003-053030	25203-053030	-
			4.0	25003-054030	-	-
			4.6	25003-054630	25203-054630	-
		100	1.0	25003-101030	-	-
			2.1	25003-102130	25203-102130	25503-102130
			3.0	25003-103030	25203-103030	25503-103030
			4.0	25003-104030	-	-
			4.6	25003-104630	25203-104630	25503-104630
		150	1.0	25003-151030	-	25503-151030
			2.1	25003-152130	25203-152130	25503-152130
			3.0	25003-153030	25203-153030	25503-153030
			4.0	25003-154030	-	-
			4.6	25003-154630	25203-154630	25503-154630
5	Drop-In-Guard (4/pk)	10	2.1	25005-012101	25205-012101	25505-012101
			3.0	25005-013001	25205-013001	-
			4.0/4.6	25005-014001	25205-014001	25505-014001
	HPLC column	30	3.0	25005-033030	-	-
			4.6	25005-034630	-	-
		50	2.1	25005-052130	25205-052130	25505-052130
			3.0	25005-053030	25205-053030	-
			4.6	25005-054630	25205-054630	-
		100	2.1	25005-102130	25205-102130	25505-102130
			3.0	25005-103030	25205-103030	25505-103030
			4.6	25005-104630	25205-104630	25505-104630
		150	2.1	25005-152130	25205-152130	25505-152130
			3.0	25005-153030	25205-153030	-
			4.0	25005-154030	25205-154030	-
			4.6	25005-154630	25205-154630	25505-154630
		250	2.1	25005-252130	25205-252130	25505-252130
			3.0	25005-253030	25205-253030	-
			4.0	25005-254030	25205-254030	-
			4.6	25005-254630	25205-254630	25505-254630

Hypersil GOLD HPLC columns

Particle size	Description	Length (mm)	ID (mm)	Hypersil GOLD aQ	Hypersil GOLD PFP	Hypersil GOLD CN
1.9	UHPLC column	20	2.1	25302-022130	25402-022130	-
		30	2.1	25302-032130	-	-
		50	1.0	25302-051030	25402-051030	-
			2.1	25302-052130	25402-052130	25802-052130
			3.0	25302-053030	25402-053030	-
			4.6	25302-054630	-	-
		100	1.0	25302-101030	25402-101030	-
			2.1	25302-102130	25402-102130	25802-102130
			3.0	25302-103030	25402-103030	-
		150	2.1	25302-152130	25402-152130	-
		200	2.1	25302-202130	25402-202130	25802-202130
3	Drop-In-Guard (4/pk)	10	1.0	25303-011001	25403-011001	25803-011001
			2.1	25303-012101	25403-012101	25803-012101
			3.0	25303-013001	25403-013001	-
			4.0/4.6	25303-014001	25403-014001	25803-014001
	HPLC column	30	2.1	25303-032130	-	-
		50	2.1	25303-052130	25403-052130	25803-052130
			3.0	25303-053030	25403-053030	-
			4.0	25303-054030	25403-054030	-
			4.6	25303-054630	25403-054630	-
		100	1.0	25303-101030	25403-101030	-
			2.1	25303-102130	25403-102130	25803-102130
			3.0	25303-103030	25403-103030	25803-103030
			4.0	25303-104030	-	-
			4.6	25303-104630	25403-104630	25803-104630
		150	1.0	25303-151030	-	-
			2.1	25303-152130	25403-152130	25803-152130
			3.0	25303-153030	25403-153030	25803-153030
			4.0	25303-154030	-	-
			4.6	25303-154630	25403-154630	25803-154630
5	Drop-In-Guard (4/pk)	10	2.1	25305-012101	25405-012101	25805-012101
			3.0	25305-013001	-	25805-013001
			4.0/4.6	25305-014001	25405-014001	25805-014001
	HPLC column	50	2.1	25305-052130	25405-052130	25805-052130
			3.0	25305-053030	-	-
			4.6	25305-054630	-	25805-054630
		100	2.1	25305-102130	25405-102130	25805-102130
			3.0	25305-103030	25405-103030	25805-103030
			4.6	25305-104630	25405-104630	-
		150	2.1	25305-152130	25405-152130	-
			3.0	25305-153030	25405-153030	-
			4.6	25305-154630	25405-154630	25805-154630
		250	2.1	25305-252130	25405-252130	-
			4.0	25305-254030	-	25805-254030
			4.6	25305-254630	25405-254630	25805-254630

Hypersil GOLD HPLC columns

Particle size	Description	Length (mm)	ID (mm)	Hypersil GOLD Phenyl	Hypersil GOLD Amino	Hypersil GOLD AX
1.9	UHPLC column	50	2.1	25902-052130	25702-052130	-
		100	2.1	25902-102130	25702-102130	26102-102130
		150	2.1	25902-152130	25702-152130	26102-152130
		200	2.1	-	25702-202130	26102-202130
3	Drop-In-Guard (4/pk)	10	2.1	25903-012101	25703-012101	26103-012101
			3.0	25903-013001	25703-013001	-
			4.0/4.6	25903-014001	25703-014001	-
	HPLC Column	50	2.1	25903-052130	25703-052130	26103-052130
		100	2.1	25903-102130	25703-102130	26103-102130
			3.0	25903-103030	25703-103030	-
			4.6	25903-104630	25703-104630	26103-10463
		150	2.1	-	25703-152130	-
			3.0	25903-153030	25703-153030	26103-153030
			4.6	25903-154630	25703-154630	-
5	Drop-In-Guard (4/pk)	10	2.1	25905-012101	25705-012101	26105-012101
			3.0	25905-013001	25705-013001	-
			4.0/4.6	25905-014001	25705-014001	-
	HPLC column	50	2.1	25905-052130	-	-
			4.6	25905-054630	-	-
		100	2.1	25905-102130	25705-102130	-
			3.0	25905-103030	-	-
			4.6	25905-154630	25705-154630	26105-154630
		250	2.1	-	25705-252130	-
			3.0	-	25705-253030	26105-253030
			4.0	-	25705-254030	-
			4.6	25905-254630	25705-254630	-

All Prep LC, including Hypersil GOLD preparative columns can be ordered online at **thermofisher.com/prepLC**

Hypersil GOLD HPLC columns

Particle size	Description	Length (mm)	ID (mm)	Hypersil GOLD SAX	Hypersil GOLD Silica	Hypersil GOLD HILIC
1.9	UHPLC column	50	2.1	-	25102-052130	26502-052130
		100	2.1	26302-102130	25102-102130	26502-102130
		150	2.1	26302-152130	25102-152130	26502-152130
		200	2.1	-	25102-202130	-
3	Drop-In-Guard (4/pk)	10	2.1	26303-012101	25103-012101	26503-012101
			3.0	-	25103-013001	26503-013001
			4.0/4.6	26303-014001	25103-014001	26503-014001
	HPLC Column	50	2.1	26303-052130	-	26503-052130
		100	2.1	26303-102130	25103-102130	26503-102130
			3.0	26303-103030	-	26503-103030
			4.6	26303-104630	-	26503-104630
		150	1.0	-	-	26503-151030
			2.1	-	25103-152130	26503-152130
			3.0	26303-153030	25103-153030	26503-153030
			4.6	26303-154630	25103-154630	26503-154630
	Drop-In-Guard (4/pk)	10	3.0	26305-013001	-	-
			4.0/4.6	26305-014001	25105-014001	26505-014001
	HPLC column	50	2.1	26305-052130	25105-052130	26505-052130
		100	2.1	26305-102130	25105-102130	26505-102130
			3.0	-	-	26505-103030
			4.6	26305-104630	-	-
		150	2.1	-	25105-152130	-
			4.6	26305-154630	25105-154630	26505-154630
		250	2.1	26305-252130	25105-252130	26505-252130
			3.0	26305-253030	-	26505-253030
			4.0	-	25105-254030	-
			4.6	26305-254630	25105-254630	26505-254630

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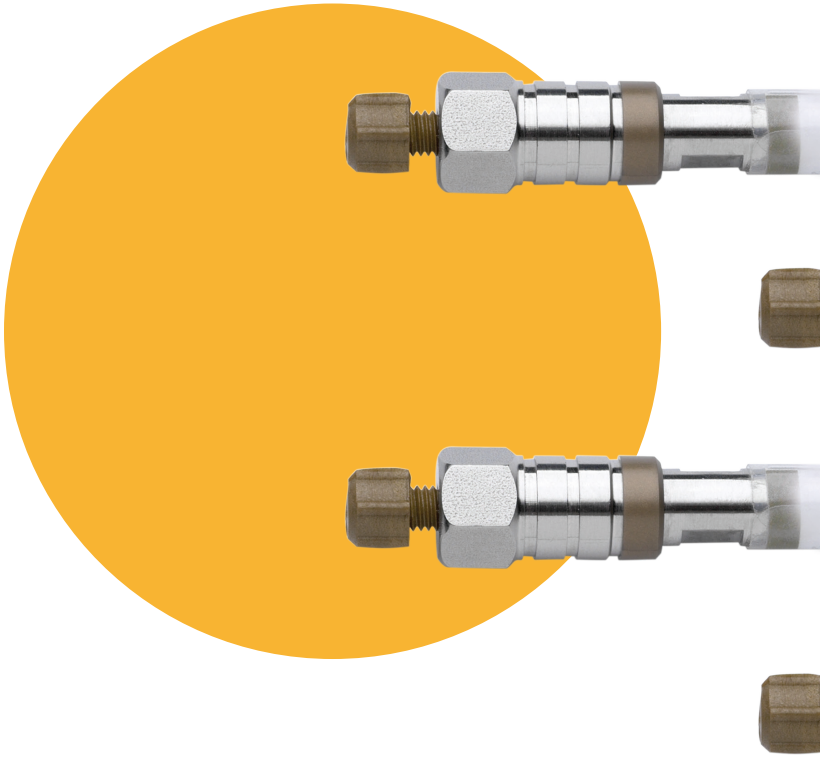

Expect reproducible results with sample prep, columns and vials

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