

ImpSil HPLC Columns

The solution for your chromatography



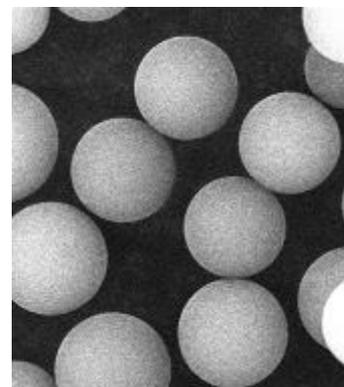
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Introduction of ImpSil series

The ImpSil columns are made from an ultra pure silica gel as the starting material. The unique manufacturing process ensures high mechanical strength and a very regular size while minimizing fines. This gives a long life under the toughest conditions. The ImpSil gel is manufactured in a range of particle sizes, pore sizes and with a variety of chemical surface bondings for reverse phase and normal phase chromatography.

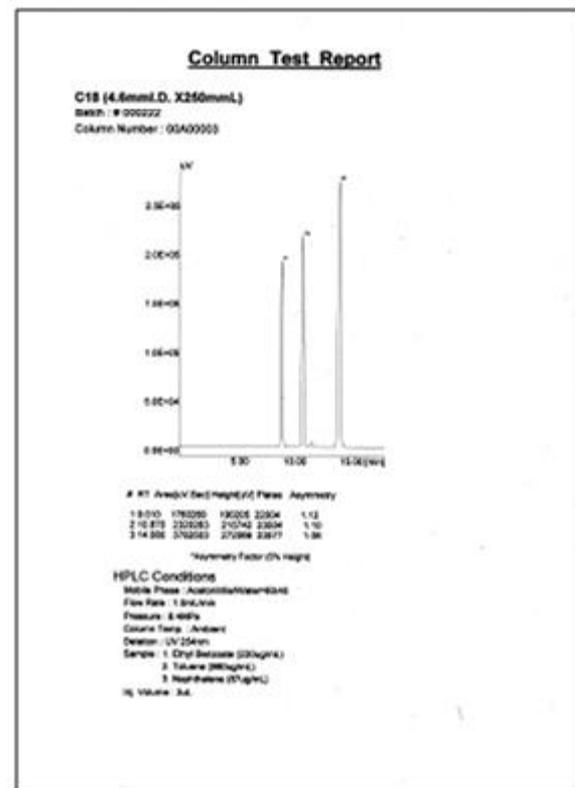


Electron micrograph of 5 μ m gel particle

Our Strict QA/QC(1)

Incoming material is checked in accordance with our intensive QC procedure to ensure the highest possible quality from the outset. The silica gel is subject to chemical treatment under strict conditions to ensure batch-to-batch reproducibility.

The columns are packed by trained experts under controlled conditions. Before leaving the factory each column manufactured at ImpTech Scientific is tested and a Column Test Report is attached to guarantee performance in your laboratory.

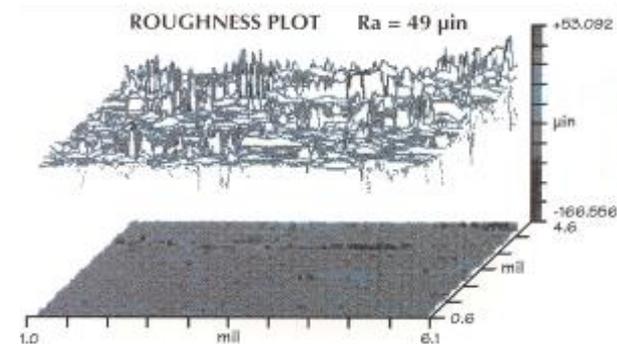
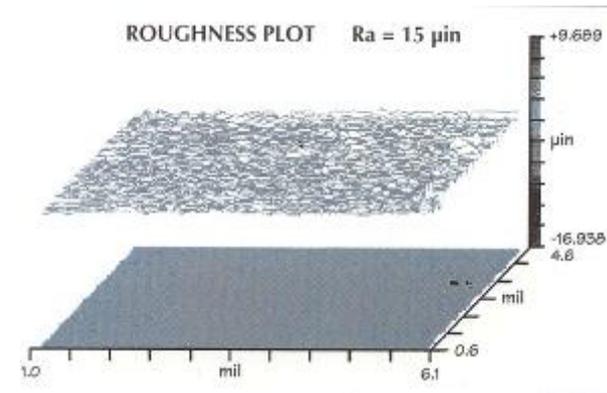


Column Test Report

Our Strict QA/QC(2)

Our attention to detail does not end with the packing material. We are also concerned with the finish of blank columns. Our column blanks are manufactured from highly polished stainless steel. - a measure of smoothness or flatness of the surface, expressed as the root average (Ra) in micro inches.

The smaller the number, the smoother or flatter the surface. The surface finish of the inner diameter of our column blanks is extremely flat to eliminate preferential flow paths and eddy spots.



New ImpSil HSC18 Offers Outstanding Performance

- ◆ Outstanding loadability
- ◆ Effective end-cap to minimize residual silanol
- ◆ Outstanding acid and alkalinity resistance
- ◆ Excellent reproducibility
- ◆ Long life time – highly durable
- ◆ High pH tolerance for acid and alkali
- ◆ Good retention even with 100% aqueous eluents



Guaranteed Performance ImpSil HSC18

All ImpSil HSC18 columns have been tested to guarantee that every column gives excellent performance at the customers' site. A validation certificate is included with every ImpSil HSC18 column.

CIHHS Validation certificate
IMPTECH

Customer of Analysis
 Column Code Name

Result	Specification
Particle Size (nm)	4,200
Surface Area (m ² /g)	400-600
Flow Volume (ml)	1.2
Flow Rate (µl)	40-100

B. Chemical Characteristics

Column name	Result	Specification
	100	100.00%

C. Chromatographic Results of Representative Pairs (n=3)

	Result	Specification
1. Reproducibility (n=3)	1.00	1.0-1.8
2. Hydrophobic interaction (n=3) (HILIC)	2.00	1.0-2.2
3. Hydrophobic interaction (n=3) (RP)	1.00	1.0-1.8
4. Hydrophobic interaction (n=3) (HPLC)	1.00	1.0-2.2
5. Ion exchange interaction (n=3) (IE)	1.00	1.0-2.2
6. Normal phase interaction (n=3) (NP)	1.00	1.0-1.8

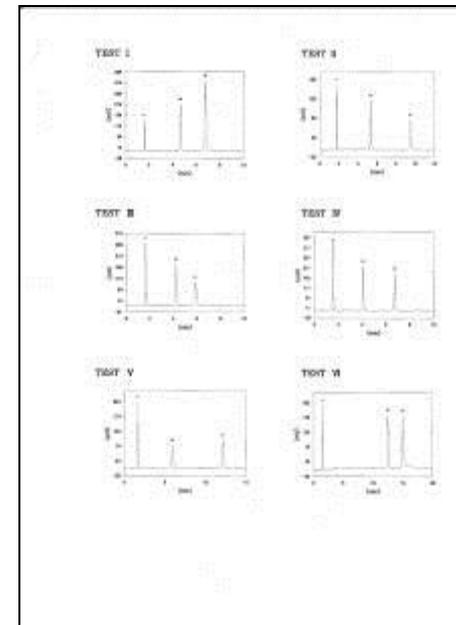
TEST 1 - Hydrophobic (HILIC)
 Mobile Phase: 50/50 v/v MeCN/50 mM Ammonium Acetate in 20 mM Citric Acid, Column Temp: 40°C, Injection Volume: 5 µl, Sample: 1.0 mg/ml Hydrophilic Inhibitor, 1.0 mg/ml Hydrophobic Inhibitor

TEST 2 - Hydrophobic interaction (HPLC)
 Mobile Phase: 50/50 v/v MeCN/50 mM Ammonium Acetate in 20 mM Citric Acid, Column Temp: 40°C, Injection Volume: 5 µl, Sample: 1.0 mg/ml Hydrophilic Inhibitor, 1.0 mg/ml Hydrophobic Inhibitor

TEST 3 - Hydrophobic interaction (RP)
 Mobile Phase: 50/50 v/v MeCN/50 mM Ammonium Acetate in 20 mM Citric Acid, Column Temp: 40°C, Injection Volume: 5 µl, Sample: 1.0 mg/ml Hydrophilic Inhibitor, 1.0 mg/ml Hydrophobic Inhibitor

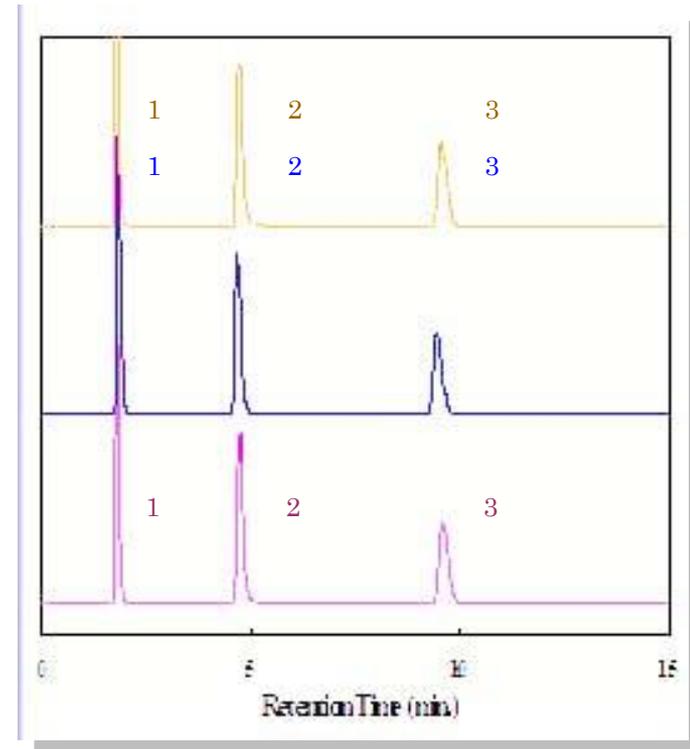
TEST 4 - Ion exchange interaction (IE)
 Mobile Phase: 50/50 v/v MeCN/50 mM Ammonium Acetate in 20 mM Citric Acid, Column Temp: 40°C, Injection Volume: 5 µl, Sample: 1.0 mg/ml Hydrophilic Inhibitor, 1.0 mg/ml Hydrophobic Inhibitor

TEST 5 - Normal phase interaction (NP)
 Mobile Phase: 50/50 v/v MeCN/50 mM Ammonium Acetate in 20 mM Citric Acid, Column Temp: 40°C, Injection Volume: 5 µl, Sample: 1.0 mg/ml Hydrophilic Inhibitor, 1.0 mg/ml Hydrophobic Inhibitor



EXCELLENT BATCH TO BATCH REPRODUCIBILITY

Excellent reproducibility on batch to bath productions has been realized due to our strict manufacturing control. The following data shows chromatograms of the ImpSil HSC18 columns from three different batches.

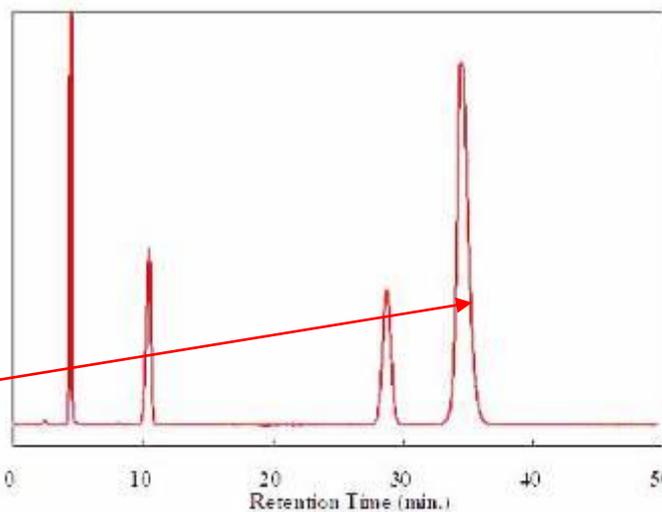
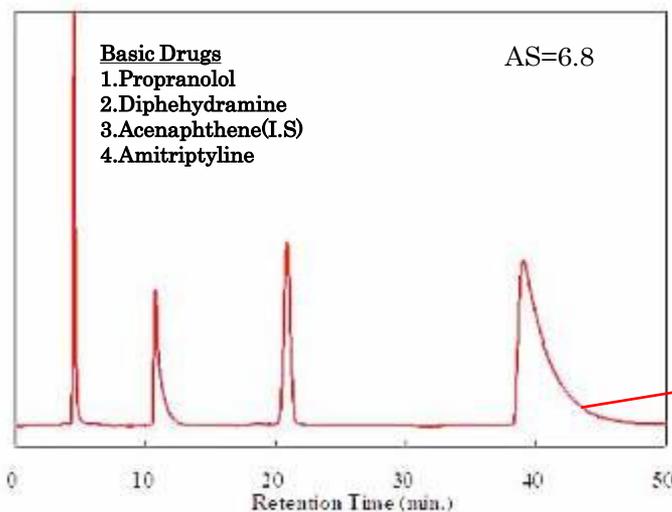


Column: ImpSil HSC18 4.6mmID x 150mmL

EXCELLENT PEAK SHAPE

The new ImpSilHS packing material has great peak symmetry characteristics. NMR data shows that the free silanol groups are completely undetectable. The carbon loading is around 17%. Even with difficult materials the new HS packing offers great resolution with virtually no tailing.

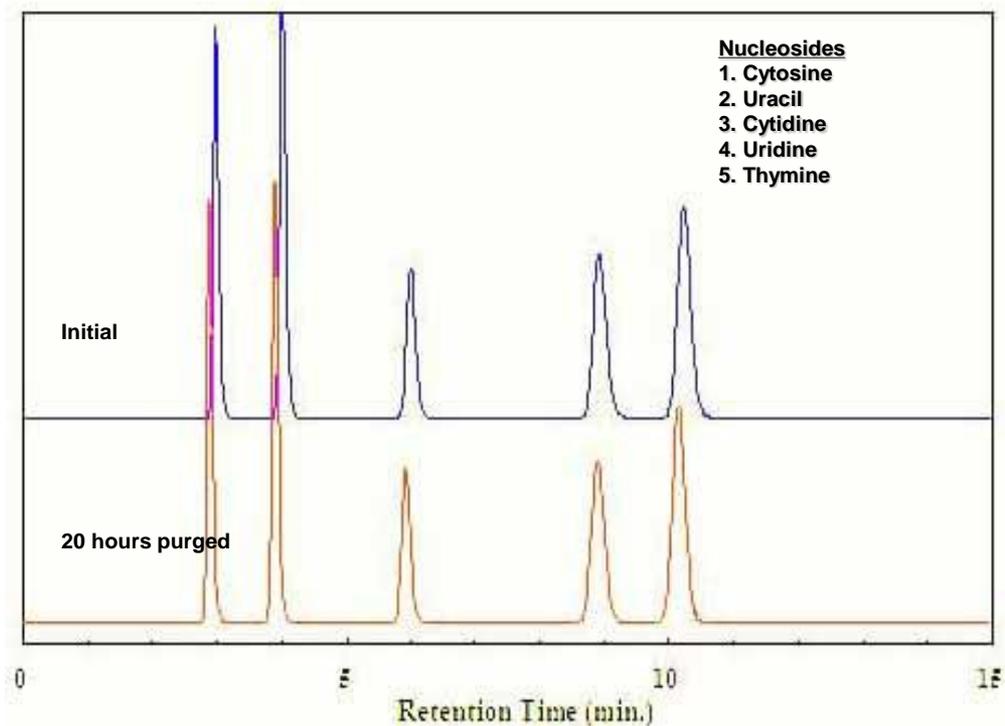
Effective newly developed high carbon loading end-capping method has drastically improved peak shape ; this is due the near absence of free silica moieties. There is virtually no tailing on the peaks and excellent symmetry peaks can be obtained from every ImpSil HSC18 column.



Column: ImpSil HSC18 4.6mmID x 150mmL

Even with 100% Aqueous Mobile Phase....

Even with 100% aqueous mobile phase, the ImpSil HSC18 shows very good retention as shown below.



Column: ImpSil HSC18 4.6mmID x 150mmL

Column Selection Guide

Sample characteristics		Separation mode	Product name	Base material	Functional group Particle and pore sizes
Water soluble Low polarity compounds to high polarity compounds		Reversed-phase distribution Separation by difference in polarity	ImpSil HSC18	High purity silica gel	C18(Octadecyl)
			ImpSil C8		C8 (Octyl)
			ImpSil C4		C4 (Butyl)
			ImpSil C1		C1 (Methyl)
			ImpSil Ph		Phenyl
			ImpSil CN		CN (Cyano)
Organic solvent soluble Low polarity compounds	Soluble in polar solvents, such as methanol or etc		ImpSil NH2		NH ₂ (Amino)
			ImpSil CN		CN (Cyano)
	Soluble in non-polar solvents, such as hexan	Normal phase distribution Separation by difference in adsorptivity	ImpSil NH2		NH ₂ (Amino)
		Normal phase distribution Separation by difference in adsorptivity	ImpSil SIL		

Impsil Product Information

Variation of Functional Groups

Product name	Particle size & pore size	Product name	Particle size and pore size
ImpSil C18HS	5µm-100Å, 3µm-100Å, 10µm-100Å	ImpSil C1	5µm-120Å, 10µm-120 Å
ImpSil C18W	3µm-120Å, 5µm-120Å, 5µm-300Å, 15µm-120 Å	ImpSil SIL	5µm-60Å, 5µm-100Å, 5µm-120Å, 10µm-120Å, 15µm-120Å
ImpSil C8	5µm-120Å, 5µm-300Å, 10µm-120 Å	ImpSil Ph	5µm-120Å, 10µm-120 Å
ImpSil C4	5µm-120Å, 5µm-300Å	ImpSil CN	5µm-120Å, 10µm-120 Å
Impil NH ₂	5µm-120Å, 10µm-120 Å		

ImpSil Product Information

Variation of Column Size

Column I.D	Column length	Scale
50µm,75µm,100µm,150µm	50mmL *different length is available.	LC-MS
0.3mm,0.5mm	35mmL, 50mmL, 75mmL, 100mmL, 150mmL,250mm	Micro
1.0mm,1.5mm,2.1mm	35mmL, 50mmL, 75mmL, 100mmL, 150mmL,250mm	Semi micro
4.0mm, 4.6mm	35mmL, 50mmL, 75mmL, 100mmL, 150mmL,250mmL,300mmL	Analytical
7.8mm, 10.0mm, 30.0mm, 50.0mm	250mmL	Preparative