GL Sciences

NEW

Specifically qualified HPLC columns for GLP/GMP Compliance validation

Inertsil™ ODS-4V *"3 μm, 5 μm"*

Inertsil ODS-4 columns have proven superior worldwide for analysis of strong pharmaceutical bases, acids, chelating compounds, and zwitterions. The long-awaited validated Inertsil ODS-4V has now been added to our product lineup. Each Inertsil ODS-4V is delivered with a manufacturers' Validation Certificate showing the detailed results of every QA and QC step in manufacturing.

By choosing Inertsil ODS-4V, you can be assured that you are using one of the most trusted and enduring HPLC columns for validation.

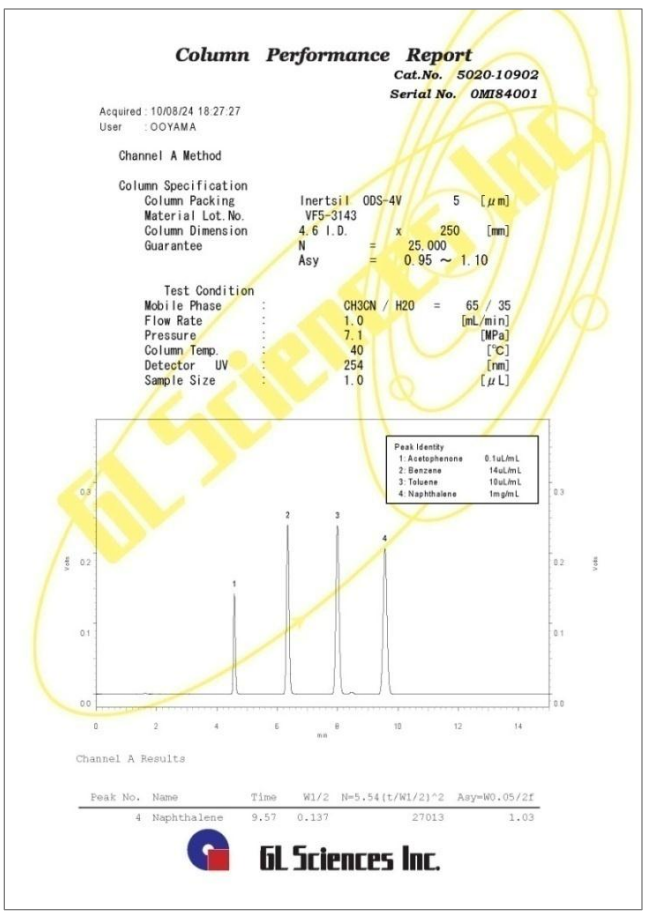
Benefits:

- Symmetric peaks for basic, acidic and chelating compounds.
- Improved Peak Shapes and Heights.
- Enhancing Sensitivity.
- High Resolution.
- Fast Re-equilibration.
- Compatible with 100% Aqueous Eluents.

Physical Properties

Silica:	High Purity Spherical Silica Gel
Particle Size:	3μm, 5μm
Surface Area:	450 m^2 / g
Pore Size:	100 Å
Pore Volume:	1.05 mL/g
Bonded Phase:	Octadecyl groups
End-capping:	Complete
Carbon Loading:	11 %
USP Code:	L1

Manufacturer's Validation Certificate Sheet



Column Performance Report

Cat.No. 5020-10902
Serial No. 0MI84001

Acquired : 10/08/24 18:27:27
User : OOYAMA

Channel A Method

Column Specification

Column Packing		Inertsil ODS-4V	5	[μm]
Material Lot.No.		VF5-3143		
Column Dimension		4.6 I.D.	x 250	[mm]
Guarantee		N	= 25,000	
		Asy	= 0.95 ~ 1.10	

Test Condition

Mobile Phase	:	CH3CN / H2O	= 65 / 35
Flow Rate	:	1.0	[mL/min]
Pressure	:	7.1	[MPa]
Column Temp.	:	40	[℃]
Detector UV	:	254	[nm]
Sample Size	:	1.0	[μL]

Peak Identity

1: Acetophenone	0.1uL/mL
2: Benzene	14uL/mL
3: Toluene	10uL/mL
4: Naphthalene	1mg/mL

Channel A Results

Peak No.	Name	Time	W1/2	N=5.54(t/W1/2)^2	Asy=W0.05/2f
4	Naphthalene	9.57	0.137	27013	1.03

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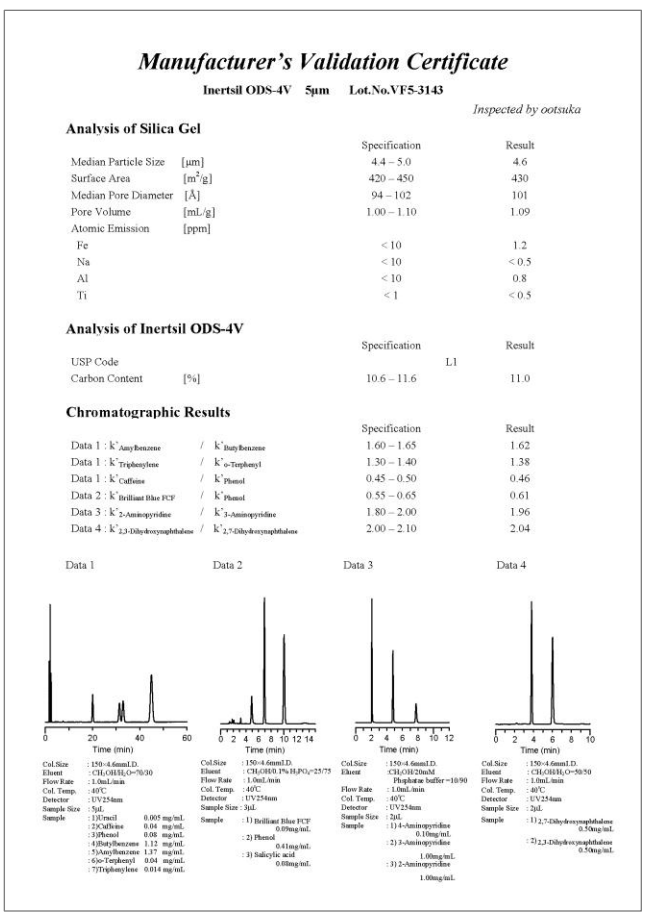


Manufacturer's Validation Certificate

Inertsil ODS-4V 5μm Lot.No.VF5-3143

Inspected by ootsuka

Analysis of Silica Gel

		Specification	Result
Median Particle Size	[μm]	4.4 – 5.0	4.6
Surface Area	[m^2/g]	420 – 450	430
Median Pore Diameter	[Å]	94 – 102	101
Pore Volume	[mL/g]	1.00 – 1.10	1.09
Atomic Emission	[ppm]		
Fe		< 10	1.2
Na		< 10	< 0.5
Al		< 10	0.8
Ti		< 1	< 0.5

Analysis of Inertsil ODS-4V

		Specification	Result
USP Code		L1	
Carbon Content	[%]	10.6 – 11.6	11.0

Chromatographic Results

	Specification	Result
Data 1 : k'$_{Amylbenzene}$ / k'$_{Butylbenzene}$	1.60 – 1.65	1.62
Data 1 : k'$_{Triphenylene}$ / k'$_{o\text{-}Terphenyl}$	1.30 – 1.40	1.38
Data 1 : k'$_{Caffeine}$ / k'$_{Phenol}$	0.45 – 0.50	0.46
Data 2 : k'$_{Brilliant\ Blue\ FCF}$ / k'$_{Phenol}$	0.55 – 0.65	0.61
Data 3 : k'$_{2\text{-}Aminopyridine}$ / k'$_{3\text{-}Aminopyridine}$	1.80 – 2.00	1.96
Data 4 : k'$_{2,3\text{-}Dihydroxynaphthalene}$ / k'$_{2,7\text{-}Dihydroxynaphthalene}$	2.00 – 2.10	2.04

Data 1 Data 2 Data 3 Data 4

Time (min)

Col.Size : 150×4.6mmI.D.
Eluent : CH_3OH/H_2O=70/30
Flow Rate : 1.0mL/min
Col. Temp. : 40℃
Detector : UV254nm
Sample Size : 5μL
Sample : 1)Uracil 0.005 mg/mL
2)Caffeine 0.04 mg/mL
3)Phenol 0.08 mg/mL
4)Butylbenzene 1.12 mg/mL
5)Amylbenzene 1.37 mg/mL
6)o-Terphenyl 0.04 mg/mL
7)Triphenylene 0.014 mg/mL

Col.Size : 150×4.6mmI.D.
Eluent : CH_3OH/0.1% H_3PO_4=25/75
Flow Rate : 1.0mL/min
Col. Temp. : 40℃
Detector : UV254nm
Sample Size : 3μL
Sample : 1) Brilliant Blue FCF 0.09mg/mL
2) Phenol 0.41mg/mL
3) Salicylic acid 0.08mg/mL

Col.Size : 150×4.6mmI.D.
Eluent : CH_3OH/20mM Phosphate buffer=10/90
Flow Rate : 1.0mL/min
Col. Temp. : 40℃
Detector : UV254nm
Sample Size : 2μL
Sample : 1) 4-Aminopyridine 0.10mg/mL
2) 3-Aminopyridine 1.00mg/mL
3) 2-Aminopyridine 1.00mg/mL

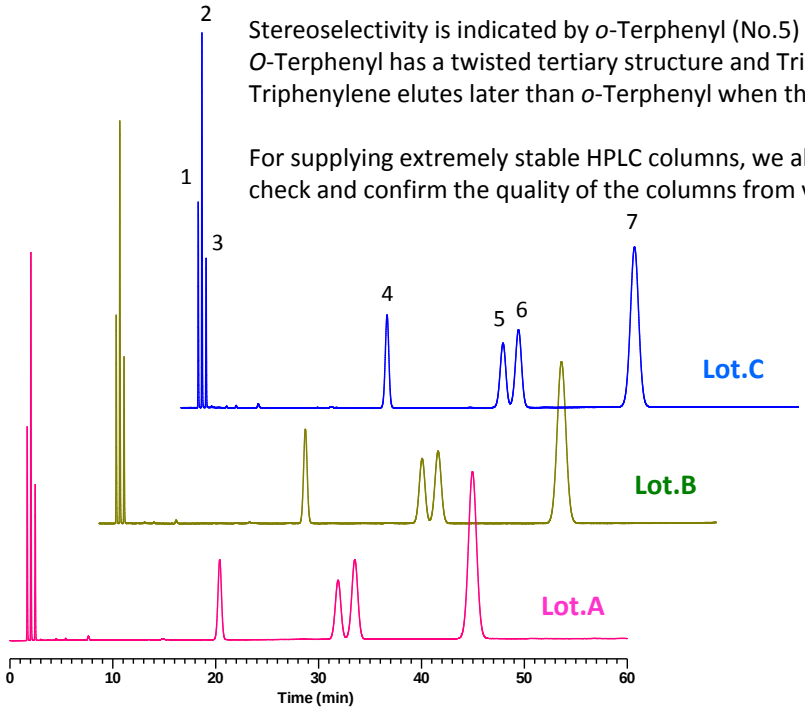
Col.Size : 150×4.6mmI.D.
Eluent : CH_3OH/H_2O=50/50
Flow Rate : 1.0mL/min
Col. Temp. : 40℃
Detector : UV254nm
Sample Size : 2μL
Sample : 1) 2,7-Dihydroxynaphthalene 0.50mg/mL
2) 2,3-Dihydroxynaphthalene 0.50mg/mL

Selectivity Test

The chromatograms of the selectivity test are shown below.
Sample No.4, *n*-Butylbenzene and Sample No.6, *n*-Amylbenzene were used to determine the hydrophobic property of the column. *n*-Amylbenzene elutes later than *n*-Butylbenzene when the hydrophobicity of the column is high.

Stereoselectivity is indicated by *o*-Terphenyl (No.5) and Triphenylene (No.7).
O-Terphenyl has a twisted tertiary structure and Triphenylene has a planar structure.
Triphenylene elutes later than *o*-Terphenyl when the stereoselectivity of the column is high.

For supplying extremely stable HPLC columns, we also employ other quality control tests to check and confirm the quality of the columns from various angles.



Conditions:

Column	: Inertsil ODS-4V (5 µm,150×4.6 mmI.D.)
Eluent	: CH_3OH/H_2O=70/30
Flow Rate	: 1.0 mL/min
Col. Temp.	: 40 ˚C
Detection	: UV254 nm
Injection Vol.	: 5 µL
Sample	1. Uracil 0.005 mg/mL 2. Caffeine 0.04 mg/mL 3. Phenol 0.08 mg/mL 4. Butylbenzene 1.12 mg/mL 5. Amylbenzene 1.37 mg/mL 6. *o*-Terphenyl 0.04 mg/mL 7. Triphenylene 0.014 mg/mL

Inertsil™ ODS-4V 3 µm Ordering information

Length/ID (mm)	2.1		3.0		4.0		4.6	
50	5020-30212		5020-30222		5020-30232		5020-30242	
75	5020-30213		5020-30223		5020-30233		5020-30243	
100	5020-30214		5020-30224		5020-30234		5020-30244	
150	5020-30215		5020-30225		5020-30235		5020-30245	
250	5020-30216		5020-30226		5020-30236		5020-30246	

Inertsil™ ODS-4V 5 µm Ordering information

Length/ID (mm)	3.0		4.0		4.6	
150	5020-10921		5020-10911		5020-10901	
250	5020-10922		55020-10912		5020-10902	

- The use of Inertsil ODS-4V columns provides an extra measure of assurance of consistent performance from column to column and batch to batch.
- Inertsil ODS-4V columns are also available in a set of three packed with available to choose your preferable combination from 3 different batches to assist in reproducibility studies.

●The specification and the column type are subject to change without notice due to continual improvements.
●All brand names and product names are trademarks or registered trademarks of GL Sciences Inc.

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