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High Performance Packed Columns for HPLC

Shim-pack® Arata

Instruction Manual

■ Introduction

Thank you for purchasing this product. Be sure to read this instruction manual before using the product. Use the product correctly in accordance with the usage methods and use related cautions noted in this instruction manual. Keep this manual for future reference.

■ Specifications

Packing Material

Item	Description
Base Material	High purity totally porous spherical silica gel
Particle Size	2.2 μm, 5 μm
Pore Size	12 nm
Surface Modification	Octadecyl group
Other Modification	End capping
Carbon Contents	About 17 %
Surface Area	About 340 m^2/g

Column

Item	Description
Type	Stainless steel tube packed column
Shipping solvent	Acetonitrile
Recommended pH Range	2 to 7.5[*1]
Maximum Usage Temperature	80 °C[*2]

[*1]: If a buffer solution is used as the mobile phase, limit the pH range to between 2.5 and 7.0, and limit the temperature to 40 °C max.

[*2]: When using a mixed solution of acetonitrile and either water or an acidic aqueous solution at a pH of 3.0 or higher.

Maximum Usage Pressure

Refer to the separate table.

■ Column Quality Assurance

A Certificate of Analysis is packaged with this product. This certificate includes the column serial number, a performance report describing the column performance, as well as information on the quality of the packing material, and the packing material lot number.

■ Column Installation

● Shim-pack Arata columns are shipped in 100% acetonitrile. If you are using a buffer solution or a mobile phase containing salts, pay attention to the replacement procedures to avoid salt precipitation.

● The direction of flow for the mobile phase is indicated for the column, so install the column in accordance with this direction.

● To minimize the extra-column peak broadening, keep the length of the tubing as short as possible. Additionally, when connecting the tubing, be careful that voids do not occur.

● If peak broadening or tailing are evident, confirm that the tubing connected to the column connector is inserted all the way.

NOTE
If contamination or air in the flow line enters the column, the column could deteriorate. Before connecting the column, be sure the flow line is completely filled with mobile phase.

■ Column Handling Precautions

● During column installation, be careful not to over tighten the male nuts, as this can damage the connector.

● To ensure the long term stable performance of the column, use it under the conditions for pressure etc. noted in the specifications. Additionally, avoid sudden pressure changes, as these may cause the column to deteriorate.

● Filter mobile phase and sample with with a membrane filter (0.45 μm max.) to remove particulates. If they contain any insoluble matter, it may clog the column, causing a pressure increase.

● It is preferable to prepare the sample in the operating mobile phase. Stronger solvents could could broaden the peaks.

● Do not shock the column (Don't drop it for example.)

● When removing the column, ensure that the column temperature is at room temperature, and that it is not under pressure.

■ Cleaning the Column

● If salts (such as phosphates) remain in the column, rinse the salts out with a flow of water/organic solvent in the same ratio as the mobile phase used.

● If hydrophobic substances or basic substances are adsorbed by the column, the retention times for peak components could change, and the peak shapes could be deteriorated. If such phenomena are observed, clean the columns using the following procedures. After cleaning, flush with mobile phase sufficiently in order to ensure that none of the cleaning solution remains in the flow lines.

Cleaning Procedures

● Removing Hydrophobic Substances

Flush the column with about 20 column volumes of 2-propanol.

● Removing Basic Substances

Flush the column with about 20 column volumes of a mixed solution of 0.1 % formic acid and acetonitrile (at for example 50/50, v/v).

NOTE

・Cleaning effect might not be sufficient depending on the extent of column contamination.

・The amount of bleed from the column is equivalent to a typical C18 column.

■ Column Storage

● If a buffer solution or ion pairing reagent was used as the mobile phase, first rinse out the electrolytes with water, and then flush it with storage solvent.

● To ensure that the column packing material does not dry out during storage, be sure to plug both ends of the column, and store it at a temperature between 15 and 40 °C. For periods longer than four days, store the columns in 100 % acetonitrile.

■ Technical Support

It is the customer's responsibility to develop and validate analytical conditions for a particular application. However, Shimadzu offers technical support by e-mail and phone for customers who need help.

Write specific questions to

analytic@group.shimadzu.co.jp or call your local representative.

■ Separate Table

Particle Size (µm)	Internal Diameter (mm)	Length (mm)	Withstanding Pressure (MPa)
2.2	2.0	50	40
2.2	2.0	75	50
2.2	2.0	100	50
2.2	2.0	150	50
2.2	3.0	50	40
2.2	3.0	75	50
2.2	3.0	100	50
2.2	3.0	150	50
5	2.0	50	15
5	2.0	75	15
5	2.0	100	20
5	2.0	150	20
5	3.0	50	15
5	3.0	75	15
5	3.0	100	20
5	3.0	150	20
5	4.6	50	15
5	4.6	75	15
5	4.6	100	20
5	4.6	150	20
5	4.6	250	20

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