

Guardgel Kits for TSK-GEL HPLC Columns

Stainless Steel Guardgel Kits	Stainless Steel Guardgel Kits for Prep Columns	Glass Guardgel Kits
07210, Kit for 7.5mm ID DEAE-5PW column 18388, Kit for 7.5mm ID SuperQ-5PW column 07646, Kit for 4.6mm ID QAE-2SW column 07648, Kit for 4.6mm and 7.5mm ID DEAE-2SW & -3SW columns 13069, Kit for 7.5mm ID CM-5PW column 07211, Kit for 7.5mm ID SP-5PW column 07644, Kit for 4.6mm ID SP-2SW column 07650, Kit for 4.6mm & 7.5mm ID CM-2SW & -3SW columns 08643, Kit for 7.5mm ID Ether-5PW column 07652, Kit for 7.5mm ID Phenyl-5PW column 13125, Kit for 7.5mm ID Boronate-5PW column 08647, Kit for 7.5mm ID Chelate-5PW column	16092, Kit for 21.5mm ID DEAE-5PW column 16093, Kit for 21.5mm ID SP-5PW column 16095, Kit for 21.5mm ID Phenyl-5PW column	08806, Kit for 5mm & 8mm ID DEAE-5PW columns 08807, Kit for 5mm & 8mm ID SP-5PW columns 14025, Kit for 5mm & 8mm ID Ether-5PW columns 14451, Kit for 5mm & 8mm ID Boronate-5PW columns

In addition to the instructions on these pages, also refer to the Instruction Manual and the Operating Conditions and Specifications sheet that came with the separation column.

A. OPERATING CONDITIONS

- Shipping Solvent: Guardgel packings for TSK-GEL HPLC columns are either shipped as a concentrated slurry or have been vacuum dried following treatment with these slurry solvents:

PW-based Ion Exchangers, HIC packings and RPC packings:	50% Methanol/50% Water
SW-based Ion Exchangers:	Acetonitrile (vacuum dried)
Affinity packings:	Water
- Other Parameters: Consult the Operating Conditions and Specifications sheet of the corresponding separation column for recommendations about what conditions to use and which ones to avoid, how to clean the column (packing material) and how to store it.

NOTE: Stainless steel frits can be cleaned by sonication in 6M HCl for 30 minutes. Use 0.2M NaOH to clean frits in glass fittings.
- Replacement: Guard column life depends greatly on sample cleanliness. As a general rule, guard columns should be replaced after every 30 - 40 sample injections, when the peaks become excessively wide, or when the peaks show splitting.

B. KIT CONTENTS

The stainless steel and glass Guardgel kits contain the parts described below. See the back of this page for instructions on how to pack each guardgel column type.

Stainless Steel

- Column Holder, consisting of external reducing union, cap, frit, 2 ferrules
- Column, 25mm x 9.5mm OD x 6mm ID, 2µm frit at 10mm depth, 1/16" exit
- 2 Replacement Frits
- Capillary Tubing, 5cm x 1/16" OD x 0.01" ID
- Nuts and Ferrules, 10 - 32 threads for 1/16" tubing, 2 each
- 5mL guardgel

Stainless Steel for Prep Columns

- Column Holder, consisting of external reducing union, cap, frit, 2 ferrules
- Column, 35mm x 12.75mm OD x 10mm ID, 10µm frit at 20mm depth, 1/16" exit
- 2 Replacement Frits
- Capillary Tubing, 5cm x 1/16" OD x 0.02" ID
- Nuts and Ferrules, 10 - 32 threads for 1/16" tubing, 2 each
- 2 x 5mL guardgel

Glass

- Column Holder, blue
- Glass Column, 10mm x 13mm OD x 8mm ID
- 2 External Endfitting, clear, accepts M6 or 1/4-28 fittings
- 2 Caps, clear, M6 threads
- Packing Adaptor, clear
- 5mL guardgel

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HOW TO PACK THE STAINLESS STEEL GUARDGEL COLUMN

Refer to the illustration below when you read the instructions.

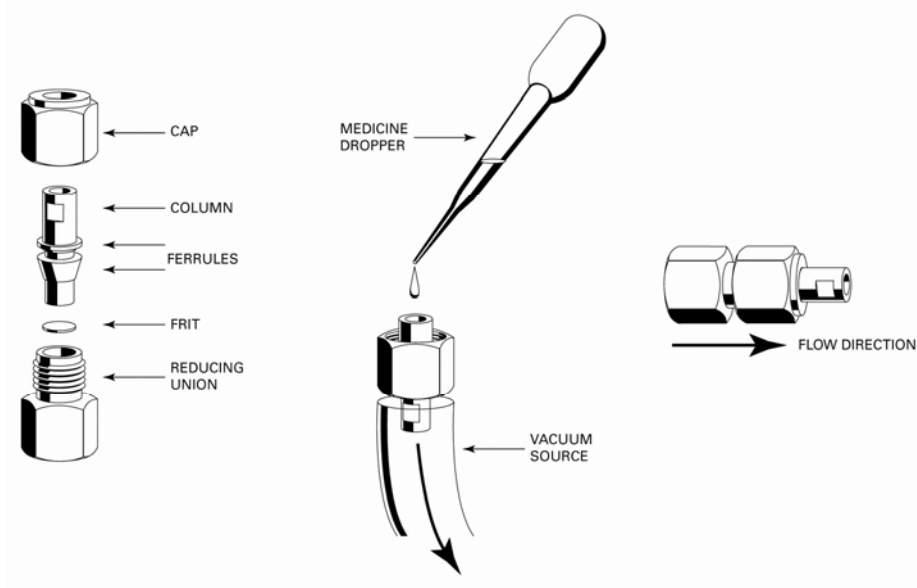
The first step is to set the ferrules onto the empty column.

1. Place the frit into the reducing union.
2. Place the column in the reducing union with the notched end facing up, as shown in the figure below.
3. Slide the large ferrule over the column, with the tapered end facing down. Slide the thinner ferrule over the column next, with the narrow part facing down.
4. Place the cap over the column such that it can be threaded onto the reducing union.
5. Using wrenches, tighten the cap onto the reducing union by making approximately 1/2 turn. This should set the ferrules onto the column tube.

The second step is to fill the column with Guardgel.

1. Remove the reducing union and frit from the assembly.
2. Orient the column and cap assembly with the notched end facing down (the threads of the cap will be visible when looking from the top). Several mm of the column should be visible above the cap.
3. Fit the column and cap assembly into a laboratory clamp.
4. Attach tubing from an aspirator or other gentle vacuum source to the column assembly and apply suction.
5. Suspend the Guardgel in its container by adding about 10mL of the appropriate shipping solvent. Shake until the slurry is homogenous.
6. Pipet the slurry into the column using a medicine dropper or pipet.
7. Continue adding gel until the surface of the gel bed is flush with the top of the column.
8. Remove excess packing with a spatula. Make sure that no packing is left on the ferrules or the column circumference.
9. Place the frit and the reducing union on top of the packed column. Screw the reducing union into the cap.
10. Tighten with a wrench.
11. Disconnect the vacuum source.

Connect the guard column (at the reducing union side) to the injector of your liquid chromatograph following the procedure described for the separation column in the Instruction Manual. Start the flow. Connect the guard column to the separation column after sufficient solvent has exited to expel all air from the guard column.



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HOW TO PACK THE GLASS GUARDGEL COLUMN

Refer to the illustration below when you read the instructions.

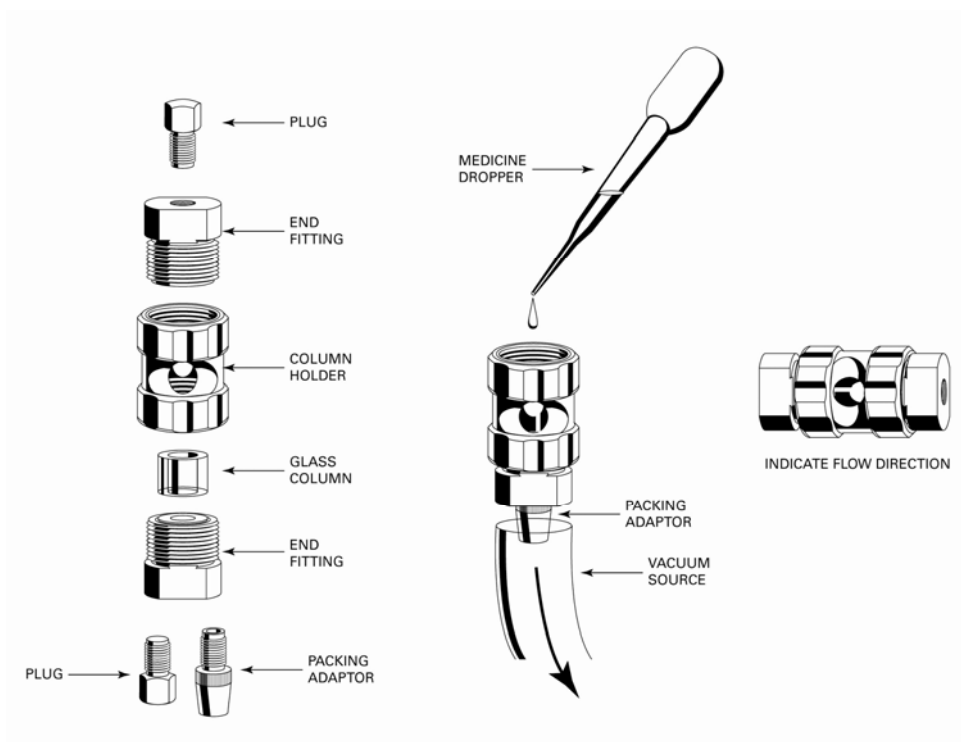
The first step is to expose the glass guard column.

1. Remove the plug from one of the endings and replace it with the packing adaptor.
2. Remove the opposite endfitting and plug.
3. This will expose the glass guard column.

The second step is to fill the column with Guardgel.

1. Fit the glass guard column assembly into a laboratory clamp with the adaptor facing down.
2. Attach tubing from an aspirator or other gentle vacuum source to the glass column assembly and apply suction.
3. Suspend the Guardgel in its container by adding about 10mL of the appropriate shipping solvent. Shake until the slurry is homogenous.
4. Pipet the slurry into the glass column using a medicine dropper or pipet.
5. Continue adding gel until the surface of the gel bed is flush with the top of the glass column.
6. Remove excess packing with a spatula.
7. Place the endfitting on the glass column.
8. Disconnect the vacuum source.
9. Remove the packing adaptor from the other end.
10. Indicate the flow direction on the guard column holder or one of the fittings at this time.
11. Screw the plugs into the endfittings if the glass guard column will not be used right away.

Connect the glass guard column to the injector of your liquid chromatograph following the procedure described for the separation column in the Instruction Manual. Start the flow. Connect the glass guard column to the separation column after sufficient solvent has exited from the bottom endfitting to expel air from the guard column.



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