TSK-GEL®SW Guardcolumn Products

Part Numbers:

05371, Guardcolumn SW, 7.5mm ID x 7.5cm, 10μm
05758, Guardcolumn SW, 21.5mm ID x 7.5 cm, 13μm
07427, Guardcolumn SW, 45.0mm ID x 7.5cm, 20μm
08805, Guardcolumn SW Glass, 8mm ID x 4cm, 10μm
14465, Guardcolumn SW Glass, 20mm ID x 4cm, 20μm

This sheet contains the recommended operating conditions and the specifications for TSK-GEL SW guard columns. Installation instructions and column care information are described in a separate Instruction Manual.

A. OPERATING CONDITIONS

1. Shipping Solvent: 0.05% NaN_3 and 0.1M Na_2SO_4 in 0.1M phosphate buffer, pH 6.7

2. Max. Flow Rate: 0.8 mL/min (8.0mm ID Glass)
1.2 mL/min (7.5mm ID)
8.0 mL/min (21.5mm ID and 20mm ID Glass)

   When a buffer with high viscosity is used, the maximum flow rate may have to be reduced so as not to exceed the maximum pressure drop. When changing solvents, use a flow rate equal to 25% of the maximum flow rate.

3. Standard Flow Rate: 0.4 - 0.8 mL/min (8.0mm ID Glass)
0.5 - 1.0 mL/min (7.5mm ID)
3.0 - 6.0 mL/min (21.5mm ID and 20mm ID Glass)

4. Max. Pressure: 8 kg/cm^2 = 120 psi (20mm ID Glass)
20 kg/cm^2 = 300 psi (8mm Glass)
30 kg/cm^2 = 450 psi (21.5mm)
50 kg/cm^2 = 600 psi (7.5mm ID)

5. pH Range: 2.5 - 7.5

6. Salt Conc.: $<$ 0.5 Molar

7. Organic Conc.: 0 - 100% for aqueous soluble organic solvents. Make gradual solvent changes using a shallow gradient at low flow rate.

8. Temperature: 10 - 30°C, Reduce flow rate when operating below 10°C.

9. Cleaning Solvents: (1) conc. salt solution at low pH, e.g. 0.5M Na_2SO_4, pH 2.7
(2) methanol or acetonitrile in low conc. aqueous buffer
(3) buffered solution of urea or guanidine

   NOTE: Choose a cleaning solvent based on sample properties, e.g. use (1) to remove basic proteins, and (2) to remove hydrophobic proteins. Chaotrophic agents can solvate strongly adsorbed proteins, e.g. via hydrogen bonding.

10. Storage: Store the column in mobile phase containing 0.05% NaN_3 when it will not be used the next day. For overnight storage flush the column with mobile phase at low flow rate. Prevent air from entering the column!

11. Column Protection: The use of guard columns is recommended to prolong the life of the analytical column. 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.

12. TSKtop-off gel: Occasionally, due to accident, sample, mobile phase or operational variables, a depression can develop at the guard column inlet. Use TSKtop-off gel SW (7.5mm and 8.0mm ID) for filling in such voids.

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