

TSKgel® UP-SW2000

Part Number:	23514, 4.6 mm ID × 30 cm, 2 µm	23516, Guard Column, 4.6 mm ID × 2 cm, 2 µm
	23515, 4.6 mm ID × 15 cm, 2 µm	23517, Guard Column, DC*, 4.6 mm ID × 2 cm, 2 µm

Both guard columns can be connected to either analytical column

*The DC guard column can be directly connected to the analytical column without tubing between the two columns. A male-type outlet endfitting on the guard column enables the direct connection to the screw-type endfitting of the analytical column.

This sheet contains the recommended operating conditions and the specifications for the TSKgel UP-SW2000 column. Installation instructions and column care information are described in a separate Instruction Manual.

A. OPERATING CONDITIONS	
1. Shipping Solvent:	0.1 mol/L phosphate buffer + 0.1 mol/L Na ₂ SO ₄ + 0.05% NaN ₃ , pH 6.7
2. Standard Flow Rate:	0.10 – 0.35 mL/min
3. Max Flow Rate:	0.50 mL/min (15 cm) 0.35 mL/min (30 cm)
4. Max. Pressure:	25 MPa (15 cm) 34 MPa (30 cm)
5. Temperature:	10 – 30 °C. Reduce flow rate when operating below 10 °C.
6. pH Range:	2.5 – 7.5
7. Organic Concentration:	0 - 100% water-soluble organic solvents such as methanol and acetonitrile
8. Cleaning Solvents:	<ol style="list-style-type: none"> To remove basic compounds: <ol style="list-style-type: none"> Clean with mobile phase which salt concentration is raised up to appropriate ionic strength, normally 0.5 mol/L or so. Clean with acidic solution like phosphate buffer, pH 2.5. To remove hydrophobic compounds: <ol style="list-style-type: none"> Clean with mobile phase containing 10 to 20 % of aqueous organic solvent like methanol or acetonitrile. (Take care of salting out of buffer or salt.) To remove poorly-soluble proteins like membrane proteins: <ol style="list-style-type: none"> Clean with 6 to 8 mol/L urea solution or 0.2 to 0.3 % neutral detergent solution like Triton, Tween, Brij. <p>Note: Use the solvent replacement flow rate (<0.17 mL/min) during cleaning and when replacing with the shipping solvent. Clean the columns with 5 to 10 column volume of cleaning solvents</p>
9. Storage:	<ol style="list-style-type: none"> Procedure: <ol style="list-style-type: none"> Replace the column contents with the shipping solvent, disconnect the column from the instrument, seal both ends with the end plugs, and store. After disconnecting the column from the instrument, wash the instrument tubing with distilled water or ion exchange water. <p>Note: Use the solvent replacement flow rate (<0.17 mL/min) during cleaning and when replacing with the shipping solvent.</p> <ol style="list-style-type: none"> Storage temperature: 15 to 30 °C
10. Column Protection:	The use of guard columns is recommended to prolong the life of the analytical column. Guard column life depends greatly on various factors, including sample properties, sample loading, solvents, etc. As a general rule, guard columns should be replaced when there is an increase in pressure to some extent, when the peaks become excessively wide or when the peaks show splitting.

B. SPECIFICATIONS	
The performance of the TSKgel UP-SW2000 column is tested under the conditions described in the data sheet. All columns have passed the following quality control specifications:	
1. Number of Theoretical Plates (N):	≥25,000 (15 cm) ≥45,000 (30 cm)
2. Asymmetry Factor (AF):	0.9 - 1.4

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