TSKgel® UP-SW3000-LS Products

Part Numbers: Columns		Part Numbers: Guard Products	
23546, 4.6 mm ID x 30 cm, 2 µm	**23547**, 4.6 mm ID x 15 cm, 2 µm	**23549,** Guard Column, DC*, 4.6 mm ID x 2 cm	**23548,** Guard Column, 4.6 mm ID x 2 cm

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 TSKgel UP-SW3000-LS columns. Installation instructions and column care information are described in a separate Instruction Manual.

A. OPERATING CONDITIONS	
1. Shipping Solvent:	20% Ethanol
2. Max. Pressure:	25 MPa (15 cm) 34 MPa (30 cm)
3. Standard Flow Rate:	0.10 - 0.35 mL/min
4. Max. Flow Rate:	0.50 mL/min (15 cm) 0.35 mL/min (30 cm)
5. pH Range:	2.5 - 7.5
6. Organic Concentration:	0 - 30% water-soluble organic solvents such as methanol and acetonitrile
7. Temperature:	10 - 30 °C. Reduce flow rate when operating below 10 °C.
8. Cleaning Solvents:	1. Turn the column in reverse flow direction and run at half the maximum flow rate. 2. Clean with 5 column volumes (CV) of 1 mol/L sodium chloride, pH 7.0 3. Clean with 5CV of ultra-pure water. 4. Clean with 5CV of 20% acetonitrile. 5. Clean with 5CV of ultra-pure water. 6. Turn column in normal flow direction and equilibrate in mobile phase for at least 45 minutes
9. Storage:	1. Procedure: a. Replace the column contents with the shipping solvent, disconnect the column from the instrument, seal both ends with the end plugs, and store. b. After disconnecting the column from the instrument, wash the instrument tubing with distilled water or ion exchange water. **Note:** Use the solvent replacement flow rate during cleaning and when replacing with the shipping solvent. 2. Storage temperature: 15 - 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 TSKgel UP-SW3000-LS columns is tested under the conditions described in the Data Sheet. All columns have passed the following quality control specifications:	
1. Min. Number of Theoretical Plates (N):	≧25,000 (15 cm) ≧45,000 (30 cm)
2. Asymmetry Factor (AF):	0.9 – 1.5

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