OPERATING CONDITIONS and SPECIFICATIONS

TSKgel® SW mAb Products

Part Numbers:	22854, TSKgel SuperSW mAb HR, 4 µm, 7.8 mm ID × 30 cm	22857, TSKgel guard column for TSKgel SuperSW mAb HR column, 4 µm, 6.0 mm ID × 4 cm
	22855, TSKgel SuperSW mAb HTP, 4 µm, 4.6 mm ID × 15 cm	22858, TSKgel guard column for TSKgel SuperSW mAb HTP column, 4 µm, 3.0 mm ID × 2 cm
	22856, TSKgel UltraSW Aggregate, 3 µm, 7.8 mm ID × 30 cm	22859, TSKgel guard column for TSKgel UltraSW Aggregate column, 3 µm, 6.0 mm ID × 4 cm

This sheet contains the recommended operating conditions and the specifications for TSKgel SW mAb columns and 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 0.1 mol/L Na_2SO_4 in 0.1 mol/L phosphate buffer, pH 6.7
2. Standard Flow Rate:	0.5~1.0 mL/min (TSKgel SuperSW mAb HR) 0.10~0.35 mL/min (TSKgel SuperSW mAb HTP) 0.5~1.0 mL/min (TSKgel UltraSW Aggregate)
3. Max Flow Rate: **NOTE**:	1.0 mL/min (TSKgel SuperSW mAb HR) 0.50 mL/min (TSKgel SuperSW mAb HTP) 1.0 mL/min (TSKgel UltraSW Aggregate) 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.
4. Max. Pressure:	12.0 Mpa (TSKgel SuperSW mAb HR) 8.0 Mpa (TSKgel SuperSW mAb HTP) 12.0 Mpa (TSKgel UltraSW Aggregate)
5. Temperature:	10 – 30 °C. Reduce flow rate when operating below 10 °C.
6. pH Range:	2.5 – 7.5
7. Salt Concentration:	≤ 0.5 mol/L
8. Organic Concentration:	0 - 20% for aqueous soluble organic solvents. Make gradual solvent changes using a shallow gradient at low flow rate.
9. Cleaning Solvents: **NOTE**:	1. To remove basic substances (Ionic adsorption): a. Increase the salt concentration of the mobile phase to an appropriate ionic strength (normally around 0.5 mol/L) and pass this through the column to clean. b. Clean the column by passing through an acidic aqueous solution (phosphate buffer solution pH 2.5). 2. To remove adsorbed hydrophobic substances (Hydrophobic adsorption): Add an aqueous organic solvent (around 10 to 20%) such as methanol or acetonitrile, etc., to the mobile phase, and pass this through the column to clean (exercise caution regarding buffer solution and salt precipitation). 3. Using an eluent containing added urea or surfactant (To remove poorly soluble proteins such as membrane proteins, etc.): Use 6 to 8 mol/L urea or 0.2 to 0.3% neutral surfactant (such as Triton, Tween, Brij, etc.) in the mobile phase, and pass this through the column to clean (residual urea and surfactant can remain in the column). 1. All of the methods described in 1- 3 above, as well as frequent solvent replacement, can cause column degradation. When cleaning the column, select an appropriate cleaning method that is compatible with the samples being analyzed. 2. Cleaning time should be roughly equal to the time it takes for 5 to 10 times the column volume to pass through the column. However, if the adsorptive force of the adsorbed components is excessively strong, it may not be possible to recover column performance, even with cleaning. 3. Because it can cause column degradation, pay particular attention to the pH of the mobile phase. 4. Clean the column at the solvent replacement flow rate.
10. Storage: **NOTE**:	1. Procedure: a. After disconnecting the column from the instrument, wash the instrument tubing with distilled water or ion exchange water. b. Replace the column contents with the shipping solvent, disconnect the column from the instrument, seal both ends with the end plugs, and store. Use the solvent replacement flow rate during cleaning and when replacing with the shipping solvent. 2. Storage temperature: 15 to 30 °C