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OPERATING CONDITIONS and SPECIFICATIONS

TSKgel ® SW mAb Products

Part Numbers:	0022855	4.6 mm ID x 15.0 cm L	**TSKgel** SuperSW mAb HTP	**4.0 µm**
	0022854	7.8 mm ID x 30.0 cm L	**TSKgel** SuperSW mAb HR	**4.0 µm**
	0022856	7.8 mm ID x 30.0 cm L	**TSKgel** UltraSW Aggregate	**3.0 µm**
Guardcolumn:	0022858	3.0 mm ID x 2.0 cm L	For **TSKgel** SuperSW mAb HTP	**4.0 µm**
	0022857	6.0 mm ID x 4.0 cm L	For **TSKgel** SuperSW mAb HR	**4.0 µm**
	0022859	6.0 mm ID x 4.0 cm L	For **TSKgel** UltraSW Aggregate	**3.0 µm**

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:	0.10 - 0.35	mL/min 4.6 mm ID
		0.50 - 1.00	mL/min 7.8 mm ID
3.	Max.Flow Rate:		Use at a flow rate (usage flow rate) that does not exceed the maximum pressure drop
	NOTE:		When a buffer with high viscosity is used, the maximum flow rate may have to be reduced so as not to exceed the recommended pressure drop. When changing solvents, use a flow rate equal to 25% of the maximum flow rate.
4.	Max. Pressure:	12	MPa 7.8 mm ID
		8	MPa 4.6 mm ID
5.	Temperature:	10 – 30 °C	Reduce flow rate when operating below 10 °C
6.	pH Range:	2.5 – 7.5	
7.	Salt Conc.:		< 0.5 mol/L
8.	Organic Conc.:		0 - 20% for aqueous soluble organic solvents. Make gradual solvent changes using a shallow gradient at low flow rate.
9.	Cleaning Solvents:		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 columndegradation. When cleaning the column, select an appropriate cleaning method that is compatible with the samplesbeing 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.

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10. Storage:

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

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.

B. SPECIFICATIONS

The performance of **TSKgel** SW mAb columns is tested under the conditions described in the Data Sheet. All columns have passed the following quality control specifications

Number of Theoretical Plates (N):	≥	15,000	4.6 mm ID x 15.0 cm L (**TSKgel** SuperSW mAb HR)
	≥	30,000	7.8 mm ID x 30.0 cm L (**TSKgel** SuperSW mAb HTP)
	≥	35,000	7.8 mm ID x 30.0 cm L (**TSKgel** UltraSW Aggregate)
Asymmetry Factor (AF):		1.20 – 1.80	4.6 mm ID x 15.0 cm L (**TSKgel** SuperSW mAb HR)
		0.80 – 1.40	7.8 mm ID x 30.0 cm L (**TSKgel** SuperSW mAb HTP)
		1.20 – 1.80	7.8 mm ID x 30.0 cm L (**TSKgel** UltraSW Aggregate)