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OPERATING CONDITIONS and SPECIFICATIONS

TSKgel[®] Octadecyl-4PW Products

Analytical/Semi-Prep:	0018755	2.0 mm ID x 15.0 cm L	7 μm
	0013351	4.6 mm ID x 15.0 cm L	7 μm
	0016257	21.5 mm ID x 15.0 cm L	13 μm

This sheet contains the recommended operating conditions and the specifications for **TSKgel** Octadecyl-4PW columns and guard columns. Installation instructions and column care information are described in a separate Instruction Manual.

A. OPERATING CONDITIONS

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| 1. Shipping Solvent: | 60% Methanol - 40% Water | | |
| 2. Max.Flow Rate: | 0.22 mL/min | 2.0 mm ID x 15.0 cm L | |
| | 1.20 mL/min | 4.6 mm ID x 15.0 cm L | |
| | 8.00 mL/min | 21.5 mm ID x 15.0 cm L | |

NOTE: 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.

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| 3. Standard Flow Rate: | 0.08 - 0.17 mL/min | 2.0 mm ID x 15.0 cm L |
| | 0.50 - 1.00 mL/min | 4.6 mm ID x 15.0 cm L |
| | 3.00 - 6.00 mL/min | 21.5 mm ID x 15.0 cm L |
| 4. Max. Pressure: | 10 MPa | 2.0 mm ID x 15.0 cm L |
| | 12 MPa | 4.6 mm ID x 15.0 cm L |
| | 3.5 MPa | 21.5 mm ID x 15.0 cm L |
| 5. pH Range: | 2 - 12 | pH above 12 can only be used for a short time |
| 6. Organic Conc.: | 0 - 100% | |
| 7. Temperature: | 5 - 50°C | |

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| 8. Cleaning Solvents: | (1) Acetonitrile or Methanol, or
(2) Aqueous buffer in organic solvent, or
(3) 0.1 - 0.2 M NaOH, or
(4) 20 - 40% acetic acid aq. |
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NOTE: Clean the column regularly with any of the above solvents. Solvents (3) and (4) can be injected into the column in 250 μ L increments for a total of one column volume. Use proportionally larger volumes for (semi-) prep columns.

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| 9. Storage: | Store the column in the shipping solvent when it will not be used the next day. For overnight storage flush the column with the mobile phase at 10 - 20% of the maximum flow rate. Prevent air from entering the column! |
| 01. 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 when the peaks become excessively wide or when the peaks show splitting. No guard column is available to protect the 21.5 mm ID column. Use an in-line filter instead. |

B. SPECIFICATIONS

The performance of **TSKgel** Octadecyl-4PW 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):	≥ 2,000	2.0 mm ID, 4.6 mm ID and 21.5 mm ID
Asymmetry Factor (AF):	0.80 - 1.60	for analytical/semi-prep columns; no spec for prep columns