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## OPERATING CONDITIONS and SPECIFICATIONS

### TSKgel® DEAE-2SW Products

<b>Part Numbers:</b>	0018761	2.0 mm ID x 25.0 cm L	Guardgel Kit DEAE-SW Guard Cartridge Holder for all 2.0 mm ID x 1.0 cm L Cartridges	5 µm
	0007168	4.6 mm ID x 25.0 cm L		5 µm
	0007648 0019308			10 µm
<b>Functional Group:</b>		-C <sub>2</sub> H <sub>4</sub> N(C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub> H		
<b>Small Ion Capacity:</b>		> 0.3 meq/mL		
<b>Counter Ion:</b>		H <sub>2</sub> PO <sub>4</sub> <sup>-</sup>		

This sheet contains the recommended operating conditions and the specifications for **TSKgel** DEAE-2SW columns. Installation instructions and column care information are described in a separate Instruction Manual.

#### A. OPERATING CONDITIONS

1. Shipping Solvent: Methanol; Replace with water before changing to the mobile phase of choice
2. Max.Flow Rate:
 

0.22 mL/min	2.0 mm ID
1.00 mL/min	4.6 mm ID

**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.

3. Standard Flow Rate:
 

0.12 - 0.17 mL/min	2.0 mm ID
0.60 - 0.80 mL/min	4.6 mm ID
4. Max. Pressure:
 

13 MPa	2.0 mm ID
15 MPa	4.6 mm ID
5. pH Range: 2.0 - 7.5
6. Ionic Strength.: Typical: 0.05 - 0.1 M starting buffer and 0.2 - 0.5 M final buffer.
7. Organic Conc.: 0 - 100% for aqueous soluble organic solvents. Make gradual solvent changes using a shallow gradient at low flow rate.
8. Temperature: 10 - 45°C Reduce flow rate when operating below 10°C.
9. Cleaning Solvents:
  - (1) Buffer with 0.5 - 1.0 M salt, or
  - (2) pH 2 - 3 buffer, or
  - (3) Buffer containing 20% methanol or acetonitrile, or, if nothing else was successful,
  - (4) Urea or nonionic surfactant in buffer.

**NOTE:** Choose a cleaning buffer based on sample properties, e.g. use (1) to remove strongly adsorbed proteins, (2) to reduce the negative charge on the biopolymer, (3) to decrease hydrophobic adsorption, and (4) to increase protein solubility.

10. Storage: Store the column in 20% methanol at ambient temperature when it will not be used the next day. For overnight storage flush the column with the low salt concentration mobile phase at 0.2 ml/min. Prevent air from entering the column!
11. Column Protection: The use of guard columns is recommended to prolong the life of the column. Guard column life depends greatly on sample cleanliness. As a rule, guard columns should be replaced when the peaks become excessively wide, or when the peaks are split.

#### B. SPECIFICATIONS

The performance of **TSKgel** DEAE-2SW 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):	≥ 5,000	2.0 mm and 4.6 mm ID
Asymmetry Factor (AF):	0.8 - 1.6	2.0 mm and 4.6 mm ID

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