

# TSKgel® DEAE-NPR Products

|                     |   |                                       |
|---------------------|---|---------------------------------------|
| <b>Column:</b>      | 0013075, 4.6mm ID X 3.5cm, 2.5µm  | <b>Counter Ion:</b> Cl <sup>-</sup>   |
| <b>Guardcolumn:</b> | 0017088, 4.6mm ID X 0.5cm, 5µm  | <b>Counter Ion:</b> Cl <sup>-</sup>   |
|                     |   | <b>Small Ion Capacity:</b> > 0.1 eq/L |
| <b>Accessories:</b> | 0014594, Pre-Injector Membrane Filter Holder, SS<br>0006280, 13mm Nylon Membrane Filter, 0.45 µm, for 14594, pk 100 |                                       |

This sheet contains the recommended operating conditions and the specifications for TSK-GEL DEAE-NPR column and guard column. Installation instructions and column care information are described in a separate Instruction Manual.

## A. OPERATING CONDITIONS

1. Shipping Solvent: The columns are shipped in water. Upon receiving, flush the column and guard column with 30% acetonitrile/70% water for 15 minutes at 1 mL/min. This is followed by equilibrating the columns with the starting buffer, and running a blank gradient.
2. Max. Flow Rate: 1.5 mL/min. 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.
3. Standard Flow Rate: 1.0 - 1.5 mL/min
4. Max. Pressure: 20.0 MPa
5. pH Range: 2 - 12 (pH above 12 can only be used for a short time)
6. Salt Conc.: ≤ 1 mol/L
7. Organic Conc.: ≤ 50%
8. Temperature: 0 - 60°C
9. Cleaning Solvents:
  - (1) 0.1 - 0.2mol/L NaOH, or
  - (2) 20 - 40% acetic acid aq., or
  - (3) 30% acetonitrile or methanol in water or buffer, or
  - (4) Urea or nonionic surfactant in buffer.

**NOTE:** Clean the column regularly by injecting up to one column volume 0.1 - 0.2mol/L NaOH in 100 - 250 l increments.

10. Storage: Store the column in 20% acetonitrile in water when it will not be used the next day. Avoid letting air enter the column!
11. Column Protection: The use of guard columns is recommended to prolong the life of the analytical column. Guard column life depends greatly on the sample cleanliness. As a general rule, guard columns should be replaced when the peaks become excessively wide, or when the peaks show splitting. We also recommend a pre-injector membrane filter to prevent particles from pump seal wear to reach the column.

**NOTE:** Use high quality reagents, water and solvents for preparing buffers. Fouling of the resin, leading to a loss in retention and/or efficiency, occurs faster due to the small surface area of non-porous resin particles.

## B. SPECIFICATIONS

The performance of TSK-GEL DEAE-NPR columns and guard columns is tested under the conditions described in the Data Sheet. During the final QC test before shipping, analytical columns must pass the following resolution specification.

1. Resolution (Rs):  $\geq 6.0$   $R_s = 2(V_2 - V_1)/1.7(W_2 + W_1)$  in which,
  - $V_1$  = elution volume ovalbumin
  - $V_2$  = elution volume trypsin inhibitor
  - $W_1, W_2$  = widths of peaks 1 and 2 at half-height