

**TSK-GEL® DNA-NPR Products**

<b>Column:</b>	18249, 4.6mm ID x 7.5cm, 2.5µm 42151, 7.5mm ID x 7.5cm, 2.5 µm	<b>Counter Ion:</b> ClO <sub>4</sub> <sup>-</sup>
<b>Guardcolumn:</b>	18253, 4.6mm ID x 0.5cm, 2.5µm	<b>Counter Ion:</b> Cl <sup>-</sup> <b>Small Ion Capacity:</b> 0.15 meq/mL
<b>Accessories:</b>	14594, Pre-Injector Membrane Filter Holder, SS 06280, Filter, 0.45µm, for 14594	

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

**A. OPERATING CONDITIONS**

- Shipping Solvent: The columns are shipped in 20mM Tris-HClO<sub>4</sub> with 38mM NaClO<sub>4</sub> (pH 9). 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.
- Max. Flow Rate: 1.5 mL/min (4.6mm ID)      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.  
2.0 mL/min (7.5mm ID)
- Standard Flow Rate: 0.5 - 1.0 mL/min (4.6mm ID)  
0.5 - 1.5 mL/min (7.5mm ID)
- Max. Pressure: 300 kg/cm<sup>2</sup> = 4500 psi (4.6mm ID)  
150 kg/cm<sup>2</sup> = 2250 psi (7.5mm ID)
- pH Range: 2 - 12
- Salt Conc.: ≤ 1 Molar
- Organic Conc.: ≤ 20%
- Temperature: 0 - 60°C
- Cleaning Solvents: (1) 0.1 - 0.2M 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 - 0.2M NaOH in 100 - 250µl increments.

- Storage: Store the column in water when it will not be used within the next three days. Avoid letting air enter the column!
- 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, but the column should be replaced at least every 200 injections or when the peaks become excessively wide or 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 DNA-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,.

- TP: ≥ 6,000 TP/column (4.6mm ID)
- Asymmetry Factor (AF): 1.40 - 3.80 (4.6mm ID)