

TSK-GEL[®] Butyl-NPR Products

Column:	14947, 4.6mm ID x 3.5cm, 2.5 μ m, nonporous 42168, 4.6mm ID x 10cm, 2.5 μ m, nonporous
Accessories:	03410, Pre-Column Filter with 0.5 μ m SS Frit 03411, Replacement 0.5 μ m Frits, for 03410, pk 10 14594, Pre-Injector Membrane Filter Holder, SS 03409, 13mm Nylon Membrane Filter, 0.45 μ m, for 14594, pk 100

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

A. OPERATING CONDITIONS

- Shipping Solvent: Distilled Water
- Max. Flow Rate: 1.2 mL/min: (PN 14947)
1.5 mL/min: (PN 42168)

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.
- Max. Pressure: 200 kg/cm² = 3000 psi
- pH Range: 2 - 12 (pH above 12 or below 2 can only be used for a short time)
- Salt Conc.: < 4 Molar
- Organic Conc.: \leq 50% (salt precipitation should be avoided when adding salts to the mobile phase containing organic solvents)
- Temperature: 10 - 60°C
- Column Washing and Regeneration: Repeated 100 - 250 μ l injections of 0.1 - 0.2M NaOH are recommended for cleaning or regenerating the column. When this procedure is not effective, we recommend repeated injections of 100 - 250 μ l of 20% aq. acetic acid.

NOTE: The above cleaning step using 0.1 - 0.2M NaOH is best performed after each day of column use.

- Storage: Store the column in shipping solvent at the end of each day of use.
- Column Protection: No guard column is available for the TSK-GEL Butyl-NPR column. Be sure to use a filter after the injector with 0.5 micron pores to avoid frequent plugging of the one micron pore size NPR column frit. 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 Butyl-NPR columns is tested under the conditions described in the Data Sheet. All columns have passed the following quality control specifications:

- Resolution (Rs): \geq 3.0 (4.6mm ID x 3.5cm)
 \geq 2.7 (4.6mm ID x 10cm)

 $Rs = 2(V_2 - V_1)/1.7(W_2 + W_1)$ in which,

 V_1 = elution volume lysozyme
 V_2 = elution volume ovalbumin
 W_1, W_2 = widths of peaks 1 and 2 at half height

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