



Im Leuschnerpark 4, 64347 Griesheim, Germany
 Tel: + 49 6155-7043700 Fax: +49 6155-8357900
 E-Mail: info.tbq@tosoh.com
 Web: www.tosohbioscience.de

3604 Horizon Drive, Suite 100, King of Prussia, PA 19406, USA
 Tel: +1 800-366-4875 Fax: +1 610-272-3028
 E-Mail: info.tbl@tosoh.com
 Web: www.tosohbioscience.com

OPERATING CONDITIONS and SPECIFICATIONS

TSKgel® DEAE-NPR™ Products

Part Numbers:	0013075	4.6 mm ID x 3.5 cm L Counter Ion: SO ₄ ²⁻		2.5 μm
	0017088	4.6 mm ID x 0.5 cm L Counter Ion: SO ₄ ²⁻	Guardcolumn	5 μm
		Small Ion Capacity:	> 0.15 meq/mL	

This sheet contains the recommended operating conditions and the specifications for **TSKgel** 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: Water
2. Max.Flow Rate: 1.6 mL/min
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: 1.0 - 1.5 mL/min
4. Max. Pressure: 20 MPa
5. pH Range: 2 - 12 pH above 12 can only be used for a short time
6. Salt Conc.: ≤ 1 Molar
7. Organic Conc.: ≤ 20%
8. Temperature: 0 - 60°C
9. Cleaning Solvents: (1) 0.1 - 0.2 M NaOH, or
(2) 20 - 40% acetic acid aq., or
(3) 30% acetonitrile or methanol in water or buffer, or, if nothing else was successful,
(4) Urea or nonionic surfactant in buffer.
NOTE: Clean the column regularly by injecting up to one column volume 0.1 - 0.2 M NaOH in 100 - 250μl 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 **TSKgel** DEAE-NPR columns is tested under the conditions described in the Data Sheet. All columns have passed the following quality control specifications

Resolution (Rs): ≥ 6.0 $Rs = 2(V_2 - V_1)/1.7(W_2 + W_1)$ 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