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OPERATING CONDITIONS and SPECIFICATIONS

TSKgel® SP-NPR™ Products

Column:	0013076	4.6 mm ID x 3.5 cm L **Counter Ion:** Na^+ **Small Ion Capacity**: >0.15 meq/mL	**2.5 µm**
Accessories:	0003410 0003411	Pre-Column Filter with 0.5 µm Frit Replacement 0.5 µm Frits, for 03410, pk 10	

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

A. OPERATING CONDITIONS

1.	Shipping Solvent:	Distilled 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 or below 2 can only be used for a short time
6.	Salt Conc.:	≤ 1 M	
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) Aqueous buffer in 30% acetonitrile or methanol, or, if nothing else was successful, (4) Urea or non-ionic surfactant in buffer
	NOTE:		Clean the column regularly by injecting up to one column volume 0.1 - 0.2 M NaOH in 100 - 250 µl increments.
10.	Storage:		Store the column in the shipping solvent when it will not be used the next day. Avoid air to enter the column!
11.	Column Protection:		No guard column is available for the **TSKgel** SP-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. 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** SP-NPR columns is tested under the conditions described in the Data Sheet. All columns have passed the following quality control specifications

Resolution (Rs):	≥	10.0	$Rs = 2(V_2 - V_1)/1.7(W_2 + W_1)$ in which V_1 = elution volume trypsinogen V_2 = elution volume α-chymotrypsinogen W_1, W_2 = widths of peaks 1 and 2 at half height

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DS1035 / April 20 / VN