

# TSK-GEL<sup>®</sup> Chelate-5PW Chelate Products

<b>Part Numbers:</b>	08645, 7.5mm ID x 7.5cm, 10 $\mu$ m 08646, 21.5mm ID x 15cm, 13 $\mu$ m 14440, 5.0mm ID Glass x 5.0cm, 10 $\mu$ m 20022, BioAssist, 7.8mm ID PEEK x 5cm, 10 $\mu$ m	08647, Guardgel Kit for P/N 08645
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This sheet contains the recommended operating conditions and the specifications for TSK-GEL Chelate-5PW columns. Installation instructions and column care information are described in a separate Instruction Manual.

<b>A. OPERATING CONDITIONS</b>	
1. Shipping Solvent:	10mM Sodium Acetate (pH 4.5) buffer. Wash the column with water before loading the column with metal ion.
2. Max. Flow Rate:	1.0mL/min (5.0mm ID Glass x 5.0cm) 1.2mL/min (7.5mm ID x 7.5cm, 7.8mm ID PEEK x 5cm) 8.0mL/min (21.5mm ID x 15cm)  The maximum flow rate may have to be reduced so as not to exceed the maximum pressure when using a viscous buffer. When changing solvents, use half the maximum flow rate.
3. Standard Flow Rate:	0.5 - 0.8mL/min (5mm ID Glass x 5cm) 0.5 - 1.0mL/min (7.5mm ID x 7.5cm, 7.8mm ID PEEK x 5cm) 4.0 - 6.0mL/min (21.5mm ID x 15cm)
4. Max. Pressure:	1MPa (7.5mm ID x 7.5cm and 7.8mm ID PEEK x 5cm) 1.5MPa (21.5mm ID x 15cm) 2MPa (5.0mm ID Glass x 5.0cm)
5. pH Range:	2 - 12 (pH above 12 can only be used for a short time)
6. Salt Conc.:	$\leq$ 3 Molar $\leq$ 4 Molar (7.8mm ID PEEK x 5cm)
7. Organic Conc.:	$\leq$ 20%
8. Temperature:	$\leq$ 45°C
9. Cleaning Solvents:	(1) 0.1-0.2M NaOH, or (2) 20-40% acetic acid aqueous (3) Aqueous buffer in organic solvent, or (4) Urea or non-ionic surfactant in buffer
<b>NOTE:</b>	Clean the column regularly by injecting up to one column volume 0.1M NaOH in 250 - 500 $\mu$ l increments.
10. Storage:	Store the column in a neutral pH buffer containing 0.02% NaN <sub>3</sub> at a temperature between 4°C and 10°C when it will not be used the next day. For overnight storage flush the column with the mobile phase at 0.2mL/min. Prevent air from entering the column!
11. Regeneration:	Remove the metal ion using an aqueous solution of 50mM EDTA in 0.5M NaCl before reloading the column with metal ion.
12. Column Protection:	Guard columns prolong the life of the analytical column. Guard column life depends greatly on sample cleanliness. As a general rule, guard columns are replaced after 30-40 sample injections, when the peaks become excessively wide, or when the peaks show splitting.
<b>B. SPECIFICATIONS</b>	
The performance of TSK-GEL Chelate-5PW columns is tested under the conditions described in the Data Sheet. All columns have passed the following quality control specifications:	
1. Number of Theoretical Plates (N):	$\geq$ 2,500 (21.5mm ID x 15cm) $\geq$ 1,300 (7.5mm ID x 7.5cm) $\geq$ 500 (5mm ID Glass x 5cm) $\geq$ 800 (7.8mm ID PEEK x 5cm)
2. Asymmetry Factor (AF):	0.7 - 1.6 (5mm ID Glass x 5cm) 0.8 - 1.6 (other columns)