

# TSK-GEL® OApak Columns

<b>Part Numbers:</b>	16653, OApak-A, 7.8mm ID x 30cm, 5 $\mu$ m 16654, OApak-P, 6.0mm ID x 4.0cm Guardcolumn, 10 $\mu$ m
<b>Accessories:</b>	14594, Pre-Injector Membrane Filter Holder, SS 03409, 13mm Nylon Membrane Filter, 0.45 $\mu$ m, for 14594, pk 100
<b>Functional Group:</b>	carbonic acid (OApak-A), and sulfonic acid (OApak-P)
<b>Ion Exchange Capacity:</b>	0.12 meq/ml (OApak-A), and 2 meq/ml (OApak-P)
<b>Counter Ion:</b>	H <sup>+</sup>

This sheet contains the recommended operating conditions and specifications for the TSKgel OApak-A analytical column and the TSKgel OApak-P guard column. Installation instructions and column care information are described in a separate Instruction Manual.

## A. OPERATING CONDITIONS

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|------------------------|--|
| 1. Shipping Solvent:   | Deionized water  |
| 2. Max. Flow Rate:     | 0.8 mL/min   |
|                        | 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. When changing solvents, use half the maximum flow rate.   |
| 3. Standard Flow Rate: | 0.4 - 0.7 mL/min   |
| 4. Max. Pressure:      | 7.0 MPa  |
| 5. pH Range:           | 2 - 12   |
| 6. Salt Conc.:         | $\leq$ 0.1mol/L  |
| 7. Organic Conc.:      | $\leq$ 20%   |
| 8. Temperature:        | 10 - 60°C  |
| 9. Cleaning Solvents:  | (1) 5mmol/l sulfuric acid or perchloric acid, or 0.1% phosphoric acid. (2) Eluent containing less than 20% organic modifier. Note: the <u>guard</u> column can be cleaned with the flow going in the direction opposite the arrow.   |
| 10. Storage:           | Store the column in the shipping solvent when it will not be used for 3 days. Avoid air from entering the column.  |
| 11. Column Protection: | The TSKgel OApak-P guard column must be placed between the injector and the analytical column to protect the analytical column <u>and</u> to allow proper detection. We also recommend a pre-injector membrane filter to prevent particles from pump seal wear from reaching the column. |

## B. SPECIFICATIONS

The performance of TSKgel OApak-A analytical columns are tested under the conditions described in the Data Sheet. All columns have passed the following quality control specifications:

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|--------------------------------------|--------------------|
| 1. Number of Theoretical Plates (N): | > 15,000 (Oapak-A) |
| 2. Asymmetry Factor (AF):            | 0.7 - 1.6          |