

Supplemental Instruction Manual for TSK-GEL PW_{XL}-CP series (TSKgel G3000PW_{XL}-CP, G5000PW_{XL}-CP and G6000PW_{XL}-CP)

To help protect you and/or your property from potential damage, please read this "Supplemental Instruction Manual" and the Instruction Manual "TSK-GEL PW type" thoroughly before using the above PW type columns.

For this PW type column, please read the following in addition to those in each section on the Instruction Manual "TSK-GEL PW type".

1. Introduction

TSK-GEL PW_{XL}-CP series based on methacrylate copolymer is designed for cationic hydrophilic polymer analyses packed in a conventional column (7.8 mm (ID)).

In this instruction manual, different points with other PW type columns are only written. Please refer to the Instruction Manual "TSK-GEL PW Type" about the points, which are not mentioned in these sections.

[Description]

Part No.	Grade	Column Size mm(ID) × cm(L)	Base Material	Particle Size (μ m)	Shipping Solvent
21873	TSKgel G3000PW _{XL} -CP	7.8 × 30	Methacrylate Copolymer	7	0.1 mol/L NaNO ₃
21874	TSKgel G5000PW _{XL} -CP	7.8 × 30	Methacrylate Copolymer	10	0.1 mol/L NaNO ₃
21875	TSKgel G6000PW _{XL} -CP	7.8 × 30	Methacrylate Copolymer	13	0.1 mol/L NaNO ₃
21876	TSKguardcolumn PW _{XL} -CP	6.0 × 4	Methacrylate Copolymer	13	0.1 mol/L NaNO ₃

6. Solvents

6-1 Replace with solvent to be used

TSK-GEL PW_{XL}-CP columns are filled with Sodium nitrate solution of 0.1 mol/L on delivery. Most cationic hydrophilic polymers can be analyzed with shipping solvent.

Table 2 Flow rate for Replacement of Solvent

Grade	Column Size mm(ID) × cm(L)	Maximum Flow Rate
TSKgel G3000PW _{XL} -CP	7.8 × 30	0.3 mL/min
TSKgel G5000PW _{XL} -CP	7.8 × 30	0.3 mL/min
TSKgel G6000PW _{XL} -CP	7.8 × 30	0.3 mL/min

6-2-2 Salt Aqueous Solutions and Buffer Solutions

The representative available solutions are shown below.

Recommended aqueous solutions

Salt aqueous solutions : Sodium nitrate, sodium acetate

Buffer solution : Acetate buffer

The salt concentrations in the range of 0.1M to 0.2M are recommended for operating the TSK-GEL PW_{XL}-CP columns.

7. Flow Rate

7-2 Suitable Flow Rate

The suitable flow rates for TSK-GEL PW_{XL}-CP columns are listed in Table 3. The use of flow rates over maximum pressure drops must be avoided to maintain the column performance.

Table 3 Flow Rate

Grade	Column Size mm(ID) × cm(L)	Suitable Flow Rate (mL/min)	Maximum Flow Rate (mL/min)	Maximum Pressure Drops (MPa)
TSKgel G3000PW _{XL} -CP	7.8 × 30	0.5 ~ 0.8	1.0	5.5
TSKgel G5000PW _{XL} -CP	7.8 × 30	0.3 ~ 0.6	1.0	2.5
TSKgel G6000PW _{XL} -CP	7.8 × 30	0.3 ~ 0.6	1.0	2.0

8. Temperature

8-1 Temperature Range

GPC experimental should be operated at 10 ~ 60 °C.

11. Guard Column

11-2 Kinds and Selection of Guard Column

The kind of guard column is shown in Table 4.

Table 4 Kind of Guard Column

Part No.	Grade	Column Size mm(ID) × cm(L)	Applicable analytical Column
21876	TSKguardcolumn PW _{XL} -CP	6.0 × 4	TSK-GEL PW _{XL} -CP series

13. Quality Specifications and Warranty

13-2 Quality Specifications

The TSK-GEL PW_{XL}-CP columns are delivered according to the specifications in Table 6.

Table 6 Guaranteed Specifications

Part No.	Grade	Column Size mm(ID) × cm(L)	Number of Theoretical Plates(TP/column)	Asymmetry Factor
21873	TSKgel G3000PW _{XL} -CP	7.8 × 30	≥ 16,000	0.7 ~ 1.6
21874	TSKgel G5000PW _{XL} -CP	7.8 × 30	≥ 10,000	0.7 ~ 1.6
21875	TSKgel G6000PW _{XL} -CP	7.8 × 30	≥ 7,000	0.7 ~ 1.6

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