

# TSK-GEL Columns **TK**

for Size Exclusion Chromatography (SEC).

The TSK-GEL (SEC) columns include both types of molecular exclusion chromatography: GFC or Gel Filtration Chromatography for the separation of water soluble polymers, and GPC (Gel Permeation Chromatography) for polymeric compounds soluble in organic solvents.

## TSK-GEL SW; TSK-GEL SWXL and TSK-GEL Super SW for the analysis of peptides and proteins by Gel Filtration Chromatography.

The silica based TSK columns are the best choice for the separation by molecular size of peptides and proteins thanks to their high efficiency, low adsorption, and their well defined and controlled distribution of pore size.

The SW columns, of 10µm particle size, have been the most popular since their introduction in the year 1978, and now constitute a market standard. The SWXL are improved on the earlier ones, due to their particle size of 5 microns, which, while maintaining efficiency, cuts analysis time by half. Finally, the columns SuperSW, with 4 micron particles of high efficiency, allows operation with columns of 4.6 mm I.D., achieving a spectacular increase of efficiency and detection sensitivity.

## Analytical and preparative TSK-Gel Size Exclusion Silica based products

Cat.No.	Description	ID (mm)	Length (cm)	Particle size(µm)
<b>Void Columns for each column size</b>				
<i>Guard columns</i>				
TH-08805	SW Guard column, Glass	8.0	4.0	10
TH-14465	SW Guard column, Glass	20.0	4.0	20
TH-18762	Super, SW Guard column	4.6	3.5	4
TH-08543	SW <sub>XL</sub> Guard column	6.0	4.0	7
TH-05371	SW Guard column	7.5	7.5	10
<i>Bulk packing</i>				
TH-08544	SW <sub>XL</sub> Top-Off, 1g wet gel			5
TH-06819	SW Top-Off, 1g wet gel			10

## Analytical and preparative TSK-Gel Size Exclusion Silica based products

Cat.No.	Description	ID (mm)	Length (cm)	Particle size(µm)
<b>Void Columns for each column size</b>				
<i>Glass columns</i>				
TH-16214	CQ-PAK TSK 200GL	8.0	15	5
TH-16216	CQ-PAK TSK 300GL	8.0	15	5
TH-08799	G2000SW, Glass	8.0	30	10
TH-08800	G3000SW, Glass	8.0	30	10
TH-08801	G4000SW, Glass	8.0	30	13
<i>Stainless steel columns</i>				
TH-18674	Super SW2000	4.6	30	4
TH-18675	Super SW3000	4.6	30	4
TH-08540	G2000SW <sub>XL</sub>	7.8	30	5
TH-08541	G3000SW <sub>XL</sub>	7.8	30	5
TH-08542	G4000SW <sub>XL</sub>	7.8	30	8
TH-16215	QC-PAK TSK 200	7.8	15	5
TH-16049	QC-PAK TSK 300	7.8	15	5
TH-05788	G2000SW	7.5	30	10
TH-05789	G3000SW	7.5	30	10
TH-05790	G4000SW	7.5	30	13
TH-05102	G2000SW	7.5	60	10
TH-05103	G3000SW	7.5	60	10
TH-05104	G4000SW	7.5	60	13

Pore sizes: Super SW2000, CQ-PAK TSK 200, G2000SW and G2000SW<sub>XL</sub> = 125A, Super SW3000, CQ PAK TSK 300, G3000SW, and G3000SW<sub>XL</sub> = 250A, G4000SW and G4000SWXL = 450A.

## Properties and separation rates for TSK-GEL SW-type packings

TSKgel packing	Particle size (µm)	Molecular weight of sample (DA)			
		Pore size (a)	Globular proteins	Dextrans	Polyethylene glycols and oxides
Super SW2000	4	125	5,000 - 1.5 X 10 <sup>5</sup>	1,000 - 3 X 10 <sup>4</sup>	500 - 15,000
G2000SW <sub>XL</sub>	5	125	5,000 - 1.5 X 10 <sup>5</sup>	1,000 - 3 X 10 <sup>4</sup>	500 - 15,000
QC-PAK TSK 200	5	125	5,000 - 1.5 X 10 <sup>5</sup>	1,000 - 3 X 10 <sup>4</sup>	500 - 15,000
G2000SW	10, 13	125	5,000 - 1.5 X 10 <sup>5</sup>	1,000 - 3 X 10 <sup>4</sup>	500 - 15,000
Super SW3000	4	250	1 X 10 <sup>4</sup> - 5 X 10 <sup>5</sup>	2,000 - 7 X 10 <sup>4</sup>	1,000 - 3.5 X 10 <sup>4</sup>
G 3000 SW <sub>XL</sub>	5	250	1 X 10 <sup>4</sup> - 5 X 10 <sup>5</sup>	2,000 - 7 X 10 <sup>4</sup>	1,000 - 3.5 X 10 <sup>4</sup>
QC-PAK TSK 300	5	250	1 X 10 <sup>4</sup> - 5 X 10 <sup>5</sup>	1,000 - 3 X 10 <sup>4</sup>	1,000 - 3.5 X 10 <sup>4</sup>
G 3000 SW	10	250	1 X 10 <sup>4</sup> - 5 X 10 <sup>5</sup>	2,000 - 7 X 10 <sup>4</sup>	1,000 - 3.5 X 10 <sup>4</sup>
G4000SW <sub>XL</sub>	8	450	2 X 10 <sup>4</sup> - 7 X 10 <sup>6</sup>	4,000 - 5 X 10 <sup>5</sup>	2,000 - 2.5 X 10 <sup>5</sup>
G4000SW	13, 17	450	2 X 10 <sup>4</sup> - 7 X 10 <sup>6</sup>	4,000 - 5 X 10 <sup>5</sup>	2,000 - 2.5 X 10 <sup>5</sup>

### Data generated using the following conditions:

**Columns:** Two 4 µm, 4.6mm x 30cm TSK-GEL Super SW columns in series, two 5 µm, 7.8mm x 30cm TSK-FEL SW<sub>XL</sub> columns in series; two 10 µm, 7.5mm x 60cm TSK-GEL SW columns in series.

**Elution:** Globular proteins: 0.3M NaCl in 0.1M (0.05M for SW<sub>XL</sub> columns) phosphate buffer, pH 7  
Dextrans and polyethylene glycols and oxides (PEOs): distilled water

