



Calibration Standards

TSKgel standards polystyrene
TSKgel standards poly(ethylene oxide)
PStQuick polystyrene calibration standards

Replacement Parts

TSKgel guard column products
Fittings
Pre-injector filters
Pre-column filters
Tubing





About: Calibration Standards

The TSKgel standards product line consists of bulk quantities of polystyrene and polyethylene oxide standards of varying molar mass and pre-mixed quantities of polystyrene polymers for calibration of GPC columns (PStQuick). All standards are tested to certify quality and reliability. Testing is done by laser light scattering, except for the standards below 1,000 Da, which are tested by size exclusion chromatography.

TSKgel polystyrene bulk calibration standards are used to calibrate size exclusion columns for subsequent analysis of unknown samples. The standards range from 400 to 2.1×10^7 Da.

TSKgel polyethylene oxide calibration standards were developed to meet the demand for a high molar mass aqueous standard polymer. Synthesized by living anionic polymerization, this product, like its sister product TSKgel

polystyrene calibration standards, has an extremely sharp molar mass distribution. The polymer is available in seven types, with molar mass values between 1.8×10^4 and 1.0×10^6 Da. The polymer may be used as a test sample for liquid chromatography, such as SEC using water (buffer) or alcohol as a solvent for evaluating the performance of a separation membrane, or for calibrating light-scattering photometers and other molar mass analysis devices. It may also be used for biochemical research.

PStQuick polystyrene calibration standards contain pre-mixed quantities of polystyrene polymers in autosampler vials for calibration of GPC columns. Addition of solvent is all that is required for easy preparation and analysis. Twelve different kits containing polystyrene polymers of various molar masses are available. Of the 12 kits, 9 are individual kits, each containing 3 to 5 polystyrene polymers. The remaining 3 are composite kits containing 2 or 3 of the individual kits.

Ordering Information - TSKgel polystyrene calibration standards

Part #	Description	Weight
05202	A-300, 400 Da	10 g
05203	A-500, 530 Da	10 g
05204	A-1000, 950 Da	10 g
05205	A-2500, 2,800 Da	5 g
05206	A-5000, 6,200 Da	5 g
05207	F-1, 1.0×10^4 Da	5 g
05208	F-2, 1.7×10^4 Da	5 g
05209	F-4, 4.4×10^4 Da	5 g
05210	F-10, 1.0×10^5 Da	5 g
05211	F-20, 1.9×10^5 Da	5 g
05212	F-40, 4.2×10^5 Da	5 g
05213	F-80, 7.8×10^5 Da	5 g
05214	F-128, 1.3×10^6 Da	1 g
05215	F-288, 2.9×10^6 Da	1 g
05216	F-380, 3.8×10^6 Da	1 g
05217	F-450, 4.5×10^6 Da	1 g
05218	F-550, 5.5×10^6 Da	1 g
05219	F-700, 6.8×10^6 Da	1 g
05220	F-850, 8.4×10^6 Da	1 g
05221	F-2000, 2.1×10^7 Da	1 g
06476	Oligomer Kit, A-500 thru F-128	12 x 1 g
06477	High MW Kit, F-10 thru F-2000	12 x 1 g

Ordering Information - TSKgel polyethylene oxide calibration standards

Part #	Description	Weight
06211	SE-2, 1.8×10^4 Da	0.5 g
06212	SE-5, 3.9×10^4 Da	0.5 g
06213	SE-8, 8.6×10^4 Da	0.5 g
06214	SE-15, 1.5×10^5 Da	0.5 g
06215	SE-30, 2.5×10^5 Da	0.5 g
06216	SE-70, 5.9×10^5 Da	0.5 g
06217	SE-150, 1.0×10^6 Da	0.5 g
05773	Polyethylene Oxide Kit, SE-2 thru SE-150	7 x 0.2 g

Ordering Information - PStQuick polystyrene calibration standards
To calibrate TSKgel SuperMultiporeHZ columns

Part #	Description	Remarks	Calibration Range	Contents	Vials
21912	PStQuick MP-N	For SuperMultiporeHZ-N	530 to 4.4×10^4	A-500, A-5000, F-4	60
21913	PStQuick MP-M	For SuperMultiporeHZ-M	530 to 8.0×10^5	A-500, A-5000, F-10, F-80	60
21914	PStQuick MP-H	For SuperMultiporeHZ-H	950 to 5.5×10^6	A-1000, F-1, F-10, F-80, F-550	60

To calibrate TSKgel H-type mixed bed columns

Part #	Description	Remarks	Calibration Range	Contents	Vials
21915	PStQuick Kit-L	For H-type – N grade	530 to 4.2×10^5	PStQuick E, F	40**
21916	PStQuick Kit-M	For H-type – M grade	530 to 2.9×10^6	PStQuick C, D	40**
21917	PStQuick Kit-H	For H-type – H grade	530 to 8.4×10^6	PStQuick A, B, C	60*

*20 of each type x 3, **20 of each type x 2

To calibrate other TSKgel GPC columns

Part #	Description	Remarks	Calibration Range	Contents	Vials
21911	PStQuick A	For other GPC columns	2,800 to 8.4×10^6	A-2500, F-2, F-20, F-128, F-850	20
21910	PStQuick B	For other GPC columns	950 to 5.5×10^6	A-1000, F-1, F-10, F-80, F-550	20
21909	PStQuick C	For other GPC columns	530 to 2.9×10^6	A-500, A-5000, F-4, F-40, F-288	20
21908	PStQuick D	For other GPC columns	2,800 to 1.3×10^6	A-2500, F-2, F-20, F-128	20
21907	PStQuick E	For other GPC columns	950 to 4.2×10^5	A-1000, A-5000, F-4, F-40	20
21906	PStQuick F	For other GPC columns	530 to 1.9×10^5	A-500, A-2500, F-2, F-20	20



About: Parts and Accessories

Tosoh Bioscience offers a limited line of replacement parts for its columns and guard columns. With the introduction of TSKgel BioAssist series, the TSKgel column line consists of stainless steel, glass and PEEK columns.

The tubing, fittings and frits in the stainless steel TSKgel columns are manufactured from 316-grade stainless steel. The top and bottom end-fittings are engraved with the pore size of the frit. If the top frit plugs, the entire end-fitting can be removed and replaced. Order the appropriate replacement fitting according to the ID of the column. Stainless steel end-fittings will connect to the 10-32 PEEK or stainless steel nuts and ferrules on a standard HPLC system.

The end-fittings on the glass columns contain Pyrex frits with a nominal 10 µm pore size. The materials in the glass column fittings that come into contact with the sample and the mobile phase are chlorotrifluoroethylene and tetrafluoroethylene. The end-fittings will connect to 1/4-28 and also to M6 nuts and ferrules.

Tosoh Bioscience recommends that each column be protected by a guard column and filter. Guard columns are listed with corresponding columns in each section of this catalog. We recommend installing a pre-column filter in front of the (guard) column to avoid clogging the top frit, particularly when working with columns that contain smaller than 5 µm particles. In addition, when suspecting debris from the breakdown of pump seals, we have found it beneficial to use a pre-injector membrane filter to prevent any particulates from reaching the injector and/or (guard) column.

Ordering Information - TSKgel guard holders

Part #	Description	ID (mm)	Length (cm)
07093	TSKgel Guardgel Holder for 7.5 mm ID SS columns	6	1
08809	TSKgel Guardgel Holder for 5 mm ID and 8 mm ID glass columns	8	1
16106	TSKgel Guardgel Holder for 21.5 mm ID SS columns	20	1
18206	TSKgel Guardfilter Holder for TSKgel Super-ODS, -Octyl, -Phenyl guard filters		
19018	TSKgel Guard Cartridge Holder for 3.2 mm ID cartridges	3.2	1.5
19308	TSKgel Cartridge Guard Holder for 2 mm ID columns	2	1

Ordering Information - fittings

Part #	Description
16566	One-Piece Fingertight Fitting, 1/16", 10-32, PEEK, ea
05748	End-fitting w/ Fixed 10 µm Frit for 7.5 mm ID SS columns
06191	End-fitting w/ Fixed 10 µm Frit for 21.5 mm ID SS columns
07619	End-fitting w/ Fixed 2 µm Frit for 4.6 mm ID SS columns
08092	End-fitting w/ Fixed 2 µm Frit for all 6 mm ID SS columns
08095	End-fitting w/ Fixed 2 µm Frit for all 7.8 mm ID SS columns
08600	End-fitting w/ 10 µm Pyrex Frit for all 8 mm ID Glass columns
13998	End-fitting w/ Fixed 1 µm Frit for NPR columns
16104	End-fitting w/ 10 µm Pyrex Frit for all 5 mm ID Glass columns
16105	End-fitting w/ 10 µm Pyrex Frit for all 20 mm ID Glass columns
18254	End-fitting w/ Fixed 1 µm Frit for TSKgel SuperH columns
18255	End-fitting w/ Fixed 1 µm Frit for TSKgel Super Series columns
18544	End-fitting w/ Fixed 2 µm Frit for TSKgel ODS-80Ts QA columns
19834	End-fitting w/5 µm Frit for 4.6 mm ID TSKgel BioAssist columns
19838	End-fitting w/5 µm Frit for TSKgel BioAssist PEEK SW _{XL} columns

Ordering Information - filter

Part #	Description
14594	Pre-Injector Membrane Filter Holder, SS

