

# *Accessories & Standards*

**Molecular Weight Standards**

**Replacement Parts**

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# Accessories & Standards

Tosoh Bioscience offers accessories that are used regularly by TSK-GEL column customers to enhance column performance and longevity. A series of molecular weight standards are offered for calibrating size exclusion columns. We also offer a limited line of replacement parts for our columns and guard columns. The complete listing of standards and parts are provided in this section.

## Molecular weight calibration standards

The TSK-GEL standards product line consists of bulk quantities polystyrene and polyethylene oxide standards of varying molecular weight. The standards are primarily used to calibrate size exclusion columns for subsequent analysis of unknown samples. The available polystyrene standards range from 400 to 21,000,000 Da while the polyethylene oxides range from 18,000 to 1,000,000 Da. All standards are tested to certify quality and reliability. Testing is done by laser light scattering, except for the standards below 1,000Da, which are tested by size exclusion chromatography.

### Ordering information:

Orders can be placed online, or via phone (800-366-4875, option #1) or fax (800-685-7595). Tosoh Bioscience LLC only accepts orders from customers in North and South America. For sales offices in other parts of the world, please visit the *Locations* page under the *About Us* tab on our website.

### Polystyrene calibration standards

P/N	Description	Nominal MW (Da)	Amount	Price (\$)
05202	A-300	400	10g	364
05203	A-500	530	10g	364
05204	A-1000	950	10g	364
05205	A-2500	2800	5g	192
05206	A-5000	6200	5g	192
05207	F-1	10,000	5g	192
05208	F-2	17,000	5g	192
05209	F-4	44,000	5g	192
05210	F-10	100,000	5g	192
05211	F-20	190,000	5g	192
05212	F-40	420,000	5g	192
05213	F-80	800,000	5g	192
05214	F-128	1,300,000	1g	91
05215	F-288	2,900,000	1g	91
05216	F-380	3,800,000	1g	91
05217	F-450	4,500,000	1g	175
05218	F-550	5,500,000	1g	236
05219	F-700	6,800,000	1g	236
05220	F-850	8,400,000	1g	236
05221	F-2000	21,000,000	1g	476
06476	Polystyrene Oligomer Kit, A-500 thru F-128		12x1g	700
06477	High MW Kit F-10 thru F-2000		12x1g	1,535

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## Polyethylene oxide calibration standards

P/N	Description	Nominal MW (Da)	Amount	Price (\$)
06211	SE-2	18,000	0.5g	102
06212	SE-5	39,000	0.5g	102
06213	SE-8	86,000	0.5g	102
06214	SE-15	150,000	0.5g	102
06215	SE-30	250,000	0.5g	102
06216	SE-70	590,000	0.5g	102
06217	SE-150	1,000,000	0.5g	102
05773	Polyethylene oxide (PEO) Kit, SE-2 thru SE-150		7x0.2g	293

*The molecular weights for the above listed polystyrene and polyethylene oxide calibration standards are determined by laser light scattering, except for polystyrene standards A-300, A-500 and A-1000 which are based on size exclusion chromatography. Results vary among individual lots.*

# Accessories & Standards

## Replacement Parts

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

The tubing, fittings and frits in the stainless steel TSK-GEL 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 10µm 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 website. 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 5µm 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.

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### Guard column products

P/N	Description	Details	Price (\$)
19018	TSKgel Guard Cartridge Holder, Replaces P/N 14100	For 4.6mm ID guard columns	293
18206	TSKgel Super-guard Filter Holder	For Super-ODS, -Octyl and -Phenyl guard filters (PN 18207)	141
19308	TSKgel Cartridge Holder	For all 2mm ID guard columns	292
03432	TSKgel Guardgel Holder	For all 7.5mm ID stainless steel columns	258
08809	Guardgel Holder, Glass	For all 5mm and 8mm columns	317
16106	Guardgel Holder	For all 21.5mm ID stainless steel columns	279

# Accessories & Standards

## Fittings

P/N	Description	Details	Price (\$)
18255	Endfitting with fixed 1µm Frit	For Super Series columns	65
16103	Endfitting with fixed 1µm Frit	For NPR columns	63
07619	Endfitting with fixed 2µm Frit	For all 4.6mm ID stainless steel columns	74
08095	Endfitting with fixed 2µm Frit	For all 7.8mm ID stainless steel columns	74
05748	Endfitting with fixed 10µm Frit	For all 7.5mm ID stainless steel columns	74
06191	Endfitting with fixed 10µm Frit	For all 21.5mm ID stainless steel columns	273
16104	Endfitting with fixed 10µm Pyrex Frit	For all 5mm ID glass columns	63
08600	Endfitting with fixed 10µm Pyrex Frit	For all 8mm ID glass columns	74
16105	Endfitting with fixed 10µm Pyrex Frit	For all 20mm ID glass columns	177
08092	Endfitting with fixed 2µm Frit	For all 6mm ID stainless steel columns	74
03400	Plug, 1/4-28, 10 pk	For glass column fitting	33
02342	Male nut and ferrule 10-32, 1/16", stainless steel, 2 pk		25
16566	One-piece fingertight fitting, 1/16", 10-32, PEEK		8
18545	Endfitting with fixed 2µm Frit	For all 2mm stainless steel columns	71
19834	Endfitting with 5µm Frit	For 4.6mm BioAssist columns	109

## Pre-injector filters

P/N	Description	Details	Price (\$)
14594	Pre-injector membrane filter holder, stainless steel	For collecting debris generated by pump seals	240
03409	13mm Nylon membrane filters 0.45µm	For P/N 14594, pk 100	96

## Pre-column filters

P/N	Description	Price (\$)
03410	Pre-column filter with 0.5µm stainless steel frit	115
03411	Replacement 0.5µm stainless steel frits, pk 10	71
03430	Replacement 2µm stainless steel frits, pk 10, for P/N 03432	33

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## Tubing

P/N	Description	Price (\$)
02353	Teflon Tubing, 1/16" x 0.01" x 150cm	40
02354	PEEK Tubing, 1/16" x 0.01" x 150cm	33
02359	Tefzel Tubing, 1/16" x 0.03" x 150cm	61
02374	Stainless Steel Tubing, 1/16" x 0.01" x 10cm, 5pk	33
02375	Stainless Steel Tubing, 1/16" x 0.02" x 10cm, 5pk	33