

# Pall Chromatography Media



**Versatile offering for purification of biomolecules**

- Size Exclusion (Gel Filtration)
- Ion Exchange
- Affinity Purification
- Mixed-Mode and Hydrophobic Charge Induction Chromatography
- Hydroxyapatite

Chromatography continues to be an essential technology for the purification of biomolecules. Pall offers an extensive portfolio of media for affinity, ion exchange, size exclusion, hydrophobic induction, and hydroxyapatite chromatography. We offer products to cover research needs, scale-up, and polishing. Depending on your specific application needs, Pall offers chromatography solutions in resin and/or membrane form. We offer flat sheet membranes, bulk resins, pre-packed columns, and media incorporated into specific product housings.

Our chromatography medias can be used for purification of biomolecules (e.g., nucleic acids, proteins) and compounds on the research and process scale. Our resins are useful in proteomic sample preparation applications, as well as in laboratory bioprocessing development and scale-up work.

For the full listing of chromatography technologies offered by Pall, please refer to the Pall Laboratory Filtration, Separation and Detection Products Catalog or visit [www.pall.com/lab](http://www.pall.com/lab).

## Chromatography Product Chart

Chromatography Type	Product	Part Number	Size	Description	Particle Size	Capacity	Stability Range (pH)	Cleaning pH	Pressure Stability	Applications		
Size Exclusion (Gel Filtration) Separation by Molecule Size Bulk Resin	UltroGel® ACA 34	23015-025	100 mL Bottle	UltroGel ACA are polymeric sorbents for size exclusion composed of polyacrylamide and agarose, characterized by narrow particle size distribution and narrow pore size distribution. ACA 202 can be used for desalting.	60-140 µm	NA	3-10	3-10	750 KD	Exclusion Limit	Fractionation Range	
	UltroGel ACA 44	23015-019	1000 mL Bottle									20-350 KD
	UltroGel ACA 54	23022-024	100 mL Bottle									10-130 KD
	UltroGel ACA 202	23022-015	1000 mL Bottle									90 KD
		23019-023	100 mL Bottle									5-70 KD
	23019-011	1000 mL Bottle	22 KD	1-15 KD								
	24892-022	100 mL Bottle										
	24892-010	1000 mL Bottle										
Ion Exchange Separation by Charge Bulk Resin	Trisacryl® GF05 M	25914-060	100 mL Bottle	Trisacryl GF are highly hydrophilic copolymers designed for medium pressure gel filtration. GF05 can be used for desalting.	40-80 µm	Desalting capacity 45% gel volume	1-11	1-11	Up to 3 bar (44 psi)	Exclusion Limit	Fractionation Range	
	Trisacryl GF2000 LS	25914-037	1000 mL Bottle		80-160 µm							33% gel volume
		26065-045	100 mL Bottle									
		26065-011	1000 mL Bottle									
	Q Ceramic HyperD® 20	20040-051	5 mL Bottle	Strong anion exchanger. Ceramic HyperD 20 ion exchangers employ a high capacity hydrogel polymerized within the large pores of a rigid ceramic bead. High resolution of biomolecules from infinite variety of feedstocks.	20 µm (avg)	> 85 mg/mL <sup>1</sup>	2-12	1-14	200 bar (3,000 psi)	Polypeptide and plasmid purification		
		20040-044	25 mL Bottle									
		20040-036	100 mL Bottle									
		20040-028	500 mL Bottle									
		20040-010	1000 mL Bottle									
	S Ceramic HyperD 20	20038-055	5 mL Bottle	Strong cation exchanger. Ceramic HyperD 20 ion exchangers employ a high capacity hydrogel polymerized within the large pores of a rigid ceramic bead.	20 µm (avg)	> 85 mg/mL <sup>2</sup>	2-12	1-14	200 bar (3,000 psi)	Polypeptide purification		
		20038-048	25 mL Bottle									
		20038-030	100 mL Bottle									
		20038-022	500 mL Bottle									
		20038-014	1000 mL Bottle									
	Q Ceramic HyperD F	20066-098	5 mL Bottle	Strong anion exchanger. Ceramic HyperD F ion exchangers employ a high capacity hydrogel polymerized within the large pores of a rigid ceramic bead.	50 µm (avg)	> 85 mg/mL <sup>1</sup>	2-12	1-14	70 bar (1,000 psi)	Protein concentration, protein separation, contaminant removal		
	20066-031	25 mL Bottle										
	20066-023	100 mL Bottle										
	20066-015	1000 mL Bottle										
S Ceramic HyperD F	20062-089	5 mL Bottle	Strong cation exchanger. Ceramic HyperD F ion exchangers employ a high capacity hydrogel polymerized within the large pores of a rigid ceramic bead.	50 µm (avg)	> 75 mg/mL <sup>2</sup>	2-12	1-14	70 bar (1,000 psi)	Protein concentration, protein separation, contaminant removal			
	20062-030	25 mL Bottle										
	20062-014	1000 mL Bottle										
DEAE Ceramic HyperD F	20067-070	5 mL Bottle	Weak anion exchanger. Ceramic HyperD F ion exchangers employ a high capacity hydrogel polymerized within the large pores of a rigid ceramic bead.	50 µm (avg)	> 85 mg/mL <sup>1</sup>	2-12	1-14	70 bar (1,000 psi)	Protein concentration, protein separation, contaminant removal			
	20067-039	25 mL Bottle										
	20067-021	100 mL Bottle										
	20067-013	1000 mL Bottle										
CM Ceramic HyperD F	20050-084	5 mL Bottle	Weak cation exchanger. Ceramic HyperD F ion exchangers employ a high capacity hydrogel polymerized within the large pores of a rigid ceramic bead.	50 µm (avg)	> 60 mg/mL <sup>2</sup>	2-12	1-14	70 bar (1,000 psi)	Protein concentration, protein separation, contaminant removal			
	20050-035	25 mL Bottle										
	20050-027	100 mL Bottle										
	20050-019	1000 mL Bottle										
AcroSep™ Columns	CM Ceramic HyperD F	20050-C001	1 mL Column	Columns pre-packed with patented HyperD "gel-in-a-shell" resins for chromatographic separations. Offers extremely high dynamic binding capacities at fast flow rates.	50 µm (avg)	> 60 mg/mL <sup>2</sup>	2-12	1-14	3 bar (44 psi)	Protein concentration, protein separation, contaminant removal		
	S Ceramic HyperD F	20062-C001									> 75 mg/mL <sup>2</sup>	
	Q Ceramic HyperD F	20066-C001									> 85 mg/mL <sup>1</sup>	
	DEAE Ceramic HyperD F IEX Variety Pack	20067-C001									> 85 mg/mL <sup>1</sup>	
	IEX Variety Pack	20067-C001	See above									
Devices	AcroPrep™ 96 with Mustang® Q, 350 µL	5047	10/pkg	Strong anion exchange membrane in a 96-well filter plate configuration.	50 µm (avg)	> 85 mg/mL <sup>1</sup>	2-12	1-14	70 bar (1,000 psi)	Protein concentration, protein separation, contaminant removal		
	AcroPrep 96 with Mustang Q, 1 mL	5062	5/pkg									
	AcroPrep 96 with Mustang S, 350 µL	5048	10/pkg									
	AcroPrep 96 with Mustang S, 1 mL	5063	5/pkg									
Acrodisc® Mustang Q Chromatography Unit	MSTG2506	10/pkg	Strong anion exchange membrane in a syringe filter configuration.	50 µm (avg)	> 60 mg/mL <sup>2</sup>	2-12	1-14	70 bar (1,000 psi)	Protein concentration, protein separation, contaminant removal			
Acrodisc Mustang S Chromatography Unit	MSTG25S6	10/pkg										
Affinity Purification Separation Using Specific Ligands Bulk Resin	Blue Trisacryl M	25896-C001	1 mL Column	Blue Trisacryl M is an affinity chromatographic sorbent. The basic matrix is Trisacryl GF2000, a macroporous non-ionic sorbent on which Cibacron® blue is covalently immobilized.	40-80 µm	HSA: 10-15 mg/mL <sup>4</sup> ; BSA: 5-7 mg/mL <sup>4</sup>	1-10	1-10	3 bar (44 psi)	Albumin depletion, purification of enzymes and proteins, such as kinases, interferons, and some coagulation factors		
		25896-051	5 mL Bottle									
		25896-045	25 mL Bottle									
		25896-010	100 mL Bottle									
		25896-028	1000 mL Bottle									
	Protein A Ceramic HyperD F	20078-C001	1 mL Column	Protein A Ceramic HyperD F is an affinity sorbent prepared using a rigid proprietary ceramic bead. Recombinant Protein A is immobilized to a specially formulated hydrogel within the porous ceramic bead.	50 µm (avg)	> 30 mg/mL <sup>4</sup>	2-11	2-13	3 bar (44 psi)	IgG purification/depletion		
		20078-036	5 mL Bottle									
		20078-028	25 mL Bottle									
		20078-010	100 mL Bottle									
		20078-044	1000 mL Bottle									
	Heparin HyperD M	20029-062	5 mL Bottle	Heparin HyperD M is composed of a porous rigid mineral bead containing heparin (porcine) bound hydrogel filled pores.	80 µm (avg)	> 25 mg/mL <sup>4</sup>	3-13	3-13	70 bar (1,000 psi)	Purification of coagulation factors, lipoproteins, growth hormones, growth factors, nucleic acid binding enzymes		
		20029-039	25 mL Bottle									
		20029-021	100 mL Bottle									
		20029-013	1000 mL Bottle									
	IMAC HyperCel™	20093-C001	1 mL Column	IMAC HyperCel uses tridentate IDA as a chelating agent. This ligand is immobilized on the HyperCel base sorbent.	80-100 µm	Metal ion capacity: 40-70 µmol Cu <sup>2+</sup> /mL ionic capacity: 90-140 µeq/mL	3-13	3-13	70 bar (1,000 psi)	Purification of His-tagged proteins, antibodies, and prefractionation of complex protein mixtures		
	20093-069	5 mL Bottle										
	20093-010	25 mL Bottle										
	20093-028	100 mL Bottle										
Lysine HyperD	20059-058	5 mL Bottle	Lysine HyperD is comprised of a porous rigid mineral bead containing lysine (L-lysine) bound hydrogel filled pores.	70 µm (avg)	> 2 mg albumin	3-13	3-13	70 bar (1,000 psi)	Purification of glycoproteins and other biological molecules that bind to Lysine			
	20059-028	25 mL Bottle										
	20059-036	100 mL Bottle										
	20059-010	1000 mL Bottle										
Kits	Enchant™ Albumin Depletion Kit	5300-ALBDEP	25 purifications	Convenient spin column format using Cibacron blue dye. Includes all buffer and devices needed for 25 purifications.	50 µm (avg)	> 2 mg albumin	3-13	3-13	70 bar (1,000 psi)	Albumin depletion from serum or plasma		
	Enchant Multi-protein Affinity Separation Kit	5300-AFFMPS	24 purifications									
Mixed Mode & Hydrophobic Induction (HIC) Bulk Resin	MEP HyperCel	12035-C001	1 mL Column	MEP HyperCel (4-mercapto-ethyl-pyridine) sorbent is a high capacity, high selectivity sorbent. In contrast to protein A sorbents, IgG binding on MEP HyperCel is essentially independent of subclass or species. "Weakly binding" variants (e.g., murine IgG, rat IgG) are well retained.	80-100 µm	> 20 mg/mL <sup>1</sup>	3-12	3-14	< 3 bar (44 psi)	Purification/depletion of polyclonal and monoclonal antibodies from most species		
		12035-069	5 mL Bottle									
		12035-010	25 mL Bottle									
		12035-028	100 mL Bottle									
		12035-036	1000 mL Bottle									
	SDR HyperD	20033-C001	1 mL Column	SDR HyperD is a "mixed mode" of size exclusion, normal phase, and reversed phase. SDR HyperD is a composite sorbent that combines a silica bead moiety filled with long chain aliphatic polymers that are cross-linked to provide a 3D mesh.	40-100 µm	60-80 mg/mL <sup>4</sup>	2-12	2-12	3 bar (44 psi)	Solvent and detergent removal while recovering NATIVE protein		
		20033-065	5 mL Bottle									
		20033-031	25 mL Bottle									
		20033-023	100 mL Bottle									
		20033-015	1000 mL Bottle									
	HEA HyperCel	20250-C001	1 mL Column	'Mixed-mode' chromatography based on a combination of electrostatic and hydrophobic properties of the protein and ligands. Has an aliphatic (n-hexylamine) ligand which has lower hydrophobicity than PPA.	80-100 µm (avg)	40-60 mg/mL <sup>4</sup>	By gradient or step-elution, e.g. pH 7.0-2.6 adsorption 7.0-9.0	1-14	< 3 bar (44 psi)	Unique industry-scalable sorbents designed for protein capture and impurity removal in a biopharmaceutical environment. Provides different selectivities not accessible with traditional ion exchange or HIC.		
		20250-012	5 mL Bottle									
		20250-026	25 mL Bottle									
		20250-033	100 mL Bottle									
		20250-041	1000 mL Bottle									
PPA HyperCel	20260-C001	1 mL Column	'Mixed-mode' chromatography based on a combination of electrostatic and hydrophobic properties of the protein and ligands. Has an aromatic (phenylpropylamine) ligand which is highly hydrophobic.	80-100 µm (avg)	40-60 mg/mL <sup>4</sup>	By gradient or step-elution, e.g. pH 7.0-2.6 adsorption 7.0-9.0	1-14	< 3 bar (44 psi)	Unique industry-scalable sorbents designed for protein capture and impurity removal in a biopharmaceutical environment. Provides different selectivities not accessible with traditional ion exchange or HIC.			
	20260-015	5 mL Bottle										
	20260-025	25 mL Bottle										
	20260-030	100 mL Bottle										
	20260-040	1000 mL Bottle										
Hydroxyapatite Bulk Resin	HA UltroGel	24775-075	5 mL Bottle	HA UltroGel hydroxyapatite sorbent is composed of cross-linked agarose beads with micro-crystals of hydroxyapatite entrapped in the agarose mesh.	60-180 µm	Cytochrome C: > 7 mg/mL <sup>10</sup> ; BSA: < 7 mg/mL <sup>11</sup>	5-13	5-13	70 bar (1,000 psi)	Fractionation, purification of biomolecules		
	24775-082	25 mL Bottle										
	24775-025	100 mL Bottle										
	24775-041	1000 mL Bottle										

(1) Dynamic binding capacity, 10% breakthrough, 200 cm/h; sample: 5 mg/mL BSA in 50 mM Tris-HCl buffer, pH 8.6.  
 (2) Dynamic binding capacity, 10% breakthrough, 200 cm/h; sample: 5 mg/mL lysozyme in 50 mM sodium acetate, pH 4.5.  
 (3) Dynamic binding capacity, 10% breakthrough, 200 cm/h; sample: 5 mg/mL hu IgG in 50 mM sodium acetate, 100 mM NaCl, pH 4.7.  
 (4) Capacity determined in PBS buffer using 5 mg/mL.  
 (5) Dynamic binding capacity, 10% breakthrough, 100 cm/h, determined using 10 mg/mL hu IgG in PBS, pH 7.4; elution in 0.1 M sodium citrate, pH 2.5; column 4.6 ID x 100 mm.  
 (6) Dynamic binding capacity at 600 cm/h, using hu AIII at 72.5 U/mL in 20 mM Tris-HCl, 0.3 M NaCl, pH 7.4, elution with 20 mM Tris-HCl, 2 M NaCl, pH 4.7, 10 cm bed height.  
 (7) Dynamic binding capacity, 10% breakthrough; determined using 5 mg/mL hu IgG in PBS, flow rate: 60 cm/h.  
 (8) Dynamic binding capacity, 10% breakthrough at 300 cm/h, determined using 5 mg/mL Triton X 100 in PBS pH 7.4.  
 (9) Dynamic binding capacity, 10% breakthrough; 100 cm/h, 5 mg/mL BSA in PBS.  
 (10) Determined using 5 mg/mL Cytochrome c diluted 50/50 in 10 mM sodium phosphate buffer, pH 6.8, at 30 cm/h.  
 (11) Determined using 1 mg/mL BSA diluted 50/50 in 10 mM sodium phosphate buffer, pH 6.8, at 12.5 cm/h.