USP-NF Column List

No.	-		_
	Packing Material	Corresponding Column	Page
L1	Octadecyl silane chemically bonded to porous or nonporous silica or ceramic microparticles, 1.5 to 10 µm in diameter, or a monolithic rod.	Silica C18M Silica C18U	24 24
L17	Strong cation-exchange resin consisting of sulfonated cross-linked styrene-divinylbenzene copolymer in the hydrogen form, 6 to 12 μm in diameter.	SUGAR SH1011	30
		SUGAR SH1821	30
		RSpak KC-811	30
L19	Strong cation-exchange resin consisting of sulfonated cross-linked styrene-divinylbenzene copolymer in the calcium form, 5-15 µm in diameter.	SUGAR SC1011	26
		SUGAR SC1211	26
L19		SUGAR EP SC1011-7F	27
		USPpak MN-431	27
		PROTEIN KW-800 series	36
	Dihydroxypropane groups chemically bonded to porous silica or hybrid particles, 1.5-10 μm in diameter, or a monolithic silica rod.	PROTEIN KW400 series	36
L20			
		PROTEIN LW-803	37
		PROTEIN LW-403 4D	37
L21	A rigid, spherical styrenedivinylbenzene copolymer, 3 to 30 μm in diameter.	RSpak DS-613	16
		RSpak DS-413	16
		GPC KF, KD, HK, LF series	48, 50, 52, 54, 5
	A cation-exchange resin made of porous polystyrene gel with sulfonic acid groups, 5-15 µm in diameter.	SUGAR SC1011	26
		SUGAR SP0810	26
			26
		SUGAR KS-800 series	
		RSpak DC-613	26
		SUGAR SZ5532	26
L22		SUGAR SC1211	26
-22		SUGAR EP SC1011-7F	27
		USPpak MN-431	27
		SUGAR SH1011	30
		SUGAR SH1821	30
		RSpak KC-811	30
		CXpak P-421S	62
L23	An anion-exchange resin made of porous polymethacrylate or polyacrylate gel with quartenary ammonium	IC I-524A	32
L20	groups, 7-12 μm in size.	IEC QA-825	62
	Packing having the capacity to separate compounds with a molecular weight range from 100-5000 (as determined by polyethylene oxide), applied to neutral, anionic, and cationic water-soluble polymers. A polymethacrylate resin base, cross-linked with polyhydroxylated ether (surface contained some residual	OHpak SB-802 HQ	40
L25		OHpak SB-802.5 HQ	40
LZU		·	
	carboxyl functional groups) was found suitable.	OHpak LB-802.5	41
L33	Packing having the capacity to separate dextrans by molecular size over a range of 4,000 to 500,000 Da. It is spherical, silica-based, and processed to provide pH stability.	PROTEIN KW-800 series	36
		PROTEIN KW400 series	36
Loo		PROTEIN LW-803	37
		PROTEIN LW-403 4D	37
L34	Strong cation-exchange resin consisting of sulfonated cross-linked styrene-divinylbenzene copolymer in the	SUGAR SP0810	26
	lead form, 7 to 9 µm in diameter.	OHpak SB-803 HQ	40
L37	Packing having the capacity to separate proteins by molecular size over a range of 2,000 to 40,000 Da. It is a polymethacrylate gel.	OHpak LB-803	41
L38	A methacrylate-based size-exclusion packing for water-soluble samples.	OHpak SB-800 HQ series	40
		OHpak LB-800 series	41
	A hydrophilic polyhydroxymethacrylate gel of totally porous spherical resin.	ODP2 HP	12
L39		RSpak DM-614	16
		OHpak SB-800 HQ series	40
		OHpak LB-800 series	41
	Pate supledentrin P.S. hudronumooul other derivative, banded to pareus silice particles, 2.10 um in		
	Deta Cyclouextilli, n.o-livuloxyplopyi etiel uenvative, bonueu to bonus sinca bancies o-to ono in		64
L45	Beta cyclodextrin, <i>R</i> ,S-hydroxypropyl ether derivative, bonded to porous silica particles, 3-10 µm in diameter.	ORpak CDBS-453	64
L45	diameter.	SUGAR KS-800 series	26
	diameter. Strong cation-exchange resin consisting of sulfonated cross-linked styrene-divinylbenzene copolymer in the		
	diameter.	SUGAR KS-800 series	26
	diameter. Strong cation-exchange resin consisting of sulfonated cross-linked styrene-divinylbenzene copolymer in the	SUGAR KS-800 series RSspak DC-613 CXpak P-421S	26 26 62
	diameter. Strong cation-exchange resin consisting of sulfonated cross-linked styrene-divinylbenzene copolymer in the sodium form, about 6 to 30 μm in diameter.	SUGAR KS-800 series RSspak DC-613 CXpak P-421S PROTEIN KW-800 series	26 26 62 36
L58	diameter. Strong cation-exchange resin consisting of sulfonated cross-linked styrene-divinylbenzene copolymer in the sodium form, about 6 to 30 μm in diameter. Packing for the size-exclusion separations of proteins (separation by molecular weight) over the range of 5	SUGAR KS-800 series RSspak DC-613 CXpak P-421S PROTEIN KW-800 series PROTEIN KW400 series	26 26 62 36 36
L58	diameter. Strong cation-exchange resin consisting of sulfonated cross-linked styrene-divinylbenzene copolymer in the sodium form, about 6 to 30 μm in diameter.	SUGAR KS-800 series RSspak DC-613 CXpak P-421S PROTEIN KW-800 series PROTEIN KW400 series PROTEIN LW-803	26 26 62 36 36 37
L58	diameter. Strong cation-exchange resin consisting of sulfonated cross-linked styrene-divinylbenzene copolymer in the sodium form, about 6 to 30 μm in diameter. Packing for the size-exclusion separations of proteins (separation by molecular weight) over the range of 5 to 7000 kDa. The packing is a spherical 1.5- to 10-μm, silica or hybrid packing with a hydrophilic coating.	SUGAR KS-800 series RSspak DC-613 CXpak P-421S PROTEIN KW-800 series PROTEIN KW400 series	26 26 62 36 36
L58 L59	diameter. Strong cation-exchange resin consisting of sulfonated cross-linked styrene-divinylbenzene copolymer in the sodium form, about 6 to 30 μm in diameter. Packing for the size-exclusion separations of proteins (separation by molecular weight) over the range of 5 to 7000 kDa. The packing is a spherical 1.5- to 10-μm, silica or hybrid packing with a hydrophilic coating. Porous vinyl alcohol copolymer with a C18 alkyl group attached to the hydroxyl group of the polymer, 2 to	SUGAR KS-800 series RSspak DC-613 CXpak P-421S PROTEIN KW-800 series PROTEIN KW400 series PROTEIN LW-803	26 26 62 36 36 37
L58 L59	diameter. Strong cation-exchange resin consisting of sulfonated cross-linked styrene-divinylbenzene copolymer in the sodium form, about 6 to 30 μm in diameter. Packing for the size-exclusion separations of proteins (separation by molecular weight) over the range of 5 to 7000 kDa. The packing is a spherical 1.5- to 10-μm, silica or hybrid packing with a hydrophilic coating.	SUGAR KS-800 series RSspak DC-613 CXpak P-421S PROTEIN KW-800 series PROTEIN KW400 series PROTEIN LW-803 PROTEIN LW-403 4D Asahipak ODP-50	26 26 62 36 36 37 37 37 14
L58 L59 L67	diameter. Strong cation-exchange resin consisting of sulfonated cross-linked styrene-divinylbenzene copolymer in the sodium form, about 6 to 30 μm in diameter. Packing for the size-exclusion separations of proteins (separation by molecular weight) over the range of 5 to 7000 kDa. The packing is a spherical 1.5- to 10-μm, silica or hybrid packing with a hydrophilic coating. Porous vinyl alcohol copolymer with a C18 alkyl group attached to the hydroxyl group of the polymer, 2 to 10 μm in diameter.	SUGAR KS-800 series RSspak DC-613 CXpak P-421S PROTEIN KW-800 series PROTEIN KW400 series PROTEIN LW-803 PROTEIN LW-403 4D Asahipak ODP-50 RSpak DE-613	26 26 62 36 36 37 37 14 16
L58 L59 L67	diameter. Strong cation-exchange resin consisting of sulfonated cross-linked styrene-divinylbenzene copolymer in the sodium form, about 6 to 30 μm in diameter. Packing for the size-exclusion separations of proteins (separation by molecular weight) over the range of 5 to 7000 kDa. The packing is a spherical 1.5- to 10-μm, silica or hybrid packing with a hydrophilic coating. Porous vinyl alcohol copolymer with a C18 alkyl group attached to the hydroxyl group of the polymer, 2 to	SUGAR KS-800 series RSspak DC-613 CXpak P-421S PROTEIN KW-800 series PROTEIN KW400 series PROTEIN LW-803 PROTEIN LW-403 4D Asahipak ODP-50 RSpak DE-613 RSpak DE-413	26 26 62 36 37 37 37 14 16 16
L58 L59 L67 L71	diameter. Strong cation-exchange resin consisting of sulfonated cross-linked styrene-divinylbenzene copolymer in the sodium form, about 6 to 30 μm in diameter. Packing for the size-exclusion separations of proteins (separation by molecular weight) over the range of 5 to 7000 kDa. The packing is a spherical 1.5- to 10-μm, silica or hybrid packing with a hydrophilic coating. Porous vinyl alcohol copolymer with a C18 alkyl group attached to the hydroxyl group of the polymer, 2 to 10 μm in diameter.	SUGAR KS-800 series RSspak DC-613 CXpak P-421S PROTEIN KW-800 series PROTEIN KW400 series PROTEIN LW-803 PROTEIN LW-403 4D Asahipak ODP-50 RSpak DE-613 RSpak DE-413 RSpak DE-213	26 26 62 36 37 37 37 14 16 16
L58 L59 L67 L71 L76	 diameter. Strong cation-exchange resin consisting of sulfonated cross-linked styrene-divinylbenzene copolymer in the sodium form, about 6 to 30 μm in diameter. Packing for the size-exclusion separations of proteins (separation by molecular weight) over the range of 5 to 7000 kDa. The packing is a spherical 1.5- to 10-μm, silica or hybrid packing with a hydrophilic coating. Porous vinyl alcohol copolymer with a C18 alkyl group attached to the hydroxyl group of the polymer, 2 to 10 μm in diameter. A rigid, spherical polymetacrylate, 4 to 6 μm in diameter. Silica based, weak cation-exchange material, 5 μm in diameter. Substrate is surface polymerized polybutadiene-maleic acid to provide carboxylic acid functionalities. Capacity not less than 29 μEq/column. 	SUGAR KS-800 series RSspak DC-613 CXpak P-421S PROTEIN KW-800 series PROTEIN KW400 series PROTEIN LW-803 PROTEIN LW-403 4D Asahipak ODP-50 RSpak DE-613 RSpak DE-613 RSpak DE-213 IC YK-421	26 26 62 36 36 37 37 14 16 16 16 33
L58 L59 L67 L71 L76	 diameter. Strong cation-exchange resin consisting of sulfonated cross-linked styrene-divinylbenzene copolymer in the sodium form, about 6 to 30 µm in diameter. Packing for the size-exclusion separations of proteins (separation by molecular weight) over the range of 5 to 7000 kDa. The packing is a spherical 1.5- to 10-µm, silica or hybrid packing with a hydrophilic coating. Porous vinyl alcohol copolymer with a C18 alkyl group attached to the hydroxyl group of the polymer, 2 to 10 µm in diameter. A rigid, spherical polymetacrylate, 4 to 6 µm in diameter. Silica based, weak cation-exchange material, 5 µm in diameter. Substrate is surface polymerized polybutadiene-maleic acid to provide carboxylic acid functionalities. Capacity not less than 29 µEq/column. Polyamine chemically bonded to cross-linked polyvinyl alcohol polymer, 5 µm in diameter. 	SUGAR KS-800 series RSspak DC-613 CXpak P-421S PROTEIN KW-800 series PROTEIN KW400 series PROTEIN LW-803 PROTEIN LW-403 4D Asahipak ODP-50 RSpak DE-613 RSpak DE-413 RSpak DE-213	26 26 62 36 37 37 37 14 16 16
L58 L59 L67 L71 L76	 diameter. Strong cation-exchange resin consisting of sulfonated cross-linked styrene-divinylbenzene copolymer in the sodium form, about 6 to 30 µm in diameter. Packing for the size-exclusion separations of proteins (separation by molecular weight) over the range of 5 to 7000 kDa. The packing is a spherical 1.5- to 10-µm, silica or hybrid packing with a hydrophilic coating. Porous vinyl alcohol copolymer with a C18 alkyl group attached to the hydroxyl group of the polymer, 2 to 10 µm in diameter. A rigid, spherical polymetacrylate, 4 to 6 µm in diameter. Silica based, weak cation-exchange material, 5 µm in diameter. Substrate is surface polymerized polybutadiene-maleic acid to provide carboxylic acid functionalities. Capacity not less than 29 µEq/column. Polyamine chemically bonded to cross-linked polyvinyl alcohol polymer, 5 µm in diameter. 	SUGAR KS-800 series RSspak DC-613 CXpak P-421S PROTEIN KW-800 series PROTEIN KW400 series PROTEIN LW-803 PROTEIN LW-403 4D Asahipak ODP-50 RSpak DE-613 RSpak DE-613 RSpak DE-213 IC YK-421	26 26 62 36 37 37 14 16 16 16 33
L45 L58 L59 L67 L71 L76 L82 L89	 diameter. Strong cation-exchange resin consisting of sulfonated cross-linked styrene-divinylbenzene copolymer in the sodium form, about 6 to 30 μm in diameter. Packing for the size-exclusion separations of proteins (separation by molecular weight) over the range of 5 to 7000 kDa. The packing is a spherical 1.5- to 10-μm, silica or hybrid packing with a hydrophilic coating. Porous vinyl alcohol copolymer with a C18 alkyl group attached to the hydroxyl group of the polymer, 2 to 10 μm in diameter. A rigid, spherical polymetacrylate, 4 to 6 μm in diameter. Silica based, weak cation-exchange material, 5 μm in diameter. Substrate is surface polymerized polybutadiene-maleic acid to provide carboxylic acid functionalities. Capacity not less than 29 μEq/column. Polyamine chemically bonded to cross-linked polyvinyl alcohol polymer, 5 μm in diameter. Packing having the capacity to separate compounds with a molecular weight range from 100 to 3000 (as determined by polyethylene oxide), applied to neutral and anionic water-soluble polymers. A polymethacrylate resin base, cross-linked with polyhydroxylate ether (surface contains some residual 	SUGAR KS-800 series RSspak DC-613 CXpak P-421S PROTEIN KW-800 series PROTEIN KW400 series PROTEIN LW-803 PROTEIN LW-403 4D Asahipak ODP-50 RSpak DE-613 RSpak DE-613 RSpak DE-413 RSpak DE-213 IC YK-421 Asahipak NH2P-50 OHpak SB-802.5 HQ	26 26 62 36 37 37 14 16 16 16 33 22 40
L58 L59 L67 L71 L76 L82	 diameter. Strong cation-exchange resin consisting of sulfonated cross-linked styrene-divinylbenzene copolymer in the sodium form, about 6 to 30 μm in diameter. Packing for the size-exclusion separations of proteins (separation by molecular weight) over the range of 5 to 7000 kDa. The packing is a spherical 1.5- to 10-μm, silica or hybrid packing with a hydrophilic coating. Porous vinyl alcohol copolymer with a C18 alkyl group attached to the hydroxyl group of the polymer, 2 to 10 μm in diameter. A rigid, spherical polymetacrylate, 4 to 6 μm in diameter. Silica based, weak cation-exchange material, 5 μm in diameter. Substrate is surface polymerized polybutadiene-maleic acid to provide carboxylic acid functionalities. Capacity not less than 29 μEq/column. Polyamine chemically bonded to cross-linked polyvinyl alcohol polymer, 5 μm in diameter. Packing having the capacity to separate compounds with a molecular weight range from 100 to 3000 (as determined by polyethylene oxide), applied to neutral and anionic water-soluble polymers. A 	SUGAR KS-800 series RSspak DC-613 CXpak P-421S PROTEIN KW-800 series PROTEIN KW400 series PROTEIN LW-803 PROTEIN LW-403 4D Asahipak ODP-50 RSpak DE-613 RSpak DE-613 RSpak DE-213 IC YK-421 Asahipak NH2P-50 OHpak SB-802.5 HQ	26 26 62 36 37 37 14 16 16 16 33 22
L58 L59 L67 L71 L76 L82	 diameter. Strong cation-exchange resin consisting of sulfonated cross-linked styrene-divinylbenzene copolymer in the sodium form, about 6 to 30 μm in diameter. Packing for the size-exclusion separations of proteins (separation by molecular weight) over the range of 5 to 7000 kDa. The packing is a spherical 1.5- to 10-μm, silica or hybrid packing with a hydrophilic coating. Porous vinyl alcohol copolymer with a C18 alkyl group attached to the hydroxyl group of the polymer, 2 to 10 μm in diameter. A rigid, spherical polymetacrylate, 4 to 6 μm in diameter. Silica based, weak cation-exchange material, 5 μm in diameter. Substrate is surface polymerized polybutadiene-maleic acid to provide carboxylic acid functionalities. Capacity not less than 29 μEq/column. Polyamine chemically bonded to cross-linked polyvinyl alcohol polymer, 5 μm in diameter. Packing having the capacity to separate compounds with a molecular weight range from 100 to 3000 (as determined by polyethylene oxide), applied to neutral and anionic water-soluble polymers. A polymethacrylate resin base, cross-linked with polyhydroxylate ether (surface contains some residual 	SUGAR KS-800 series RSspak DC-613 CXpak P-421S PROTEIN KW-800 series PROTEIN KW400 series PROTEIN LW-803 PROTEIN LW-403 4D Asahipak ODP-50 RSpak DE-613 RSpak DE-613 RSpak DE-413 RSpak DE-213 IC YK-421 Asahipak NH2P-50 OHpak SB-802.5 HQ	26 26 62 36 37 37 14 16 16 16 16 33 22 40