

# HPLC Column Selection by Ph.Eur. Listing

The European Pharmacopeia (*Ph. Eur.*), of the Council of Europe is a pharmacopeia, listing a wide range of active substances and excipients used to prepare pharmaceutical products in Europe. It includes general and specific monographs that give quality standards for all the main medicines used in Europe. All medicines sold in the 37 Member States of the European Pharmacopeia must comply with these quality standards so that consumers have a guarantee for products obtained from pharmacies and other legal suppliers.

It is widely understood that all HPLC packings are not alike, and no single column can perform a myriad of desired separations. HPLC packings differ in hydrophobicity, surface coverage, surface area, pore size, and particle shape.

For each European Pharmacopeia (*Ph. Eur.*) description of the HPLC stationary phase, you will find listed the most suitable Phenomenex HPLC column. Other possible columns can also be used for these analyses. Please contact Phenomenex for your specific LC column needs.

Description According to Pharm. Eur. 7.4 4.1.1. Reagents 2012	Number	Recommended Phenomenex Column	Indicated Particle Size (µm)	Page
Silica gel T <sub>1</sub> -acceptor / T <sub>1</sub> -Donor for chiral separations (1-(3,5-dinitrobenzamide)-1,2,3,4-tetrahydrophenanthrene).	1160100	Whelk-O 1+2		Call
Silica gel AD for chiral separation coated with Amylose tris (3,5-dimethylphenylcarbamate)	1171700		5	
Silica gel AGP for chiral chromatography. (alpha 1-acid glycoprotein)	1148700			
Silica gel BC for chiral chromatography. (Beta-Cyclodextrin)	1161300	Sumichiral OA-7000		338
Silica gel for chromatography.	1076900	Luna Silica(2)	3 to 10	209
Silica gel for chromatography, alkyl bonded for use with highly aqueous mobile phases.	1160200	Synergi Hydro-RP Synergi Fusion-RP Gemini C18 Gemini NX-C18 Kinetex C18 Kinetex XB-C18		264 224 184 184 196 196
Silica gel for chromatography, alkyl bonded for use with highly aqueous mobile phases, endcapped.	1176900	Synergi Hydro-RP Synergi Fusion-RP Gemini C18 Gemini NX-C18 Kinetex C18 Kinetex XB-C18		264 264 184 184 196 196
Silica gel for chromatography, amidohexadecylsilyl.	1170400			
Silica gel for chromatography, aminohexadecylsilyl.	1138400		3 to 10	
Silica gel for chromatography, aminopropylmethylsilyl.	1102400	SphereClone NH <sub>2</sub> (Amino) PhenoSphere NH <sub>2</sub> (Amino)	3 to 10	261 236
Silica gel for chromatography, aminopropylsilyl.	1077000	SphereClone NH <sub>2</sub> (Amino) PhenoSphere NH <sub>2</sub> (Amino)	3 to 10	261 236
Silica gel for chromatography, Amylose derivative of.	1109800	Lux Amylose-2	10	332
Silica gel for chromatography, butylsilyl. Spheroidal 300 Å; pore volume: 0.6 cm <sup>3</sup> /g; area: 80 m <sup>2</sup> /g.	1076200	Aeris WIDEPORE C4	3 to 10	296
Silica gel for chromatography, butylsilyl, endcapped.	1170500	Jupiter 300 C4 Aeris WIDEPORE C4	3 to 10	307 332
Silica gel for chromatography, crown-ether.	1178000	Sumichiral OA-8000		338
Silica gel for chromatography, cyanosilyl.	1109900	Luna CN (Cyano) HyperClone CN (Cyano) PhenoSphere CN (Cyano)	3 to 10	209 193 237
Silica gel for chromatography, di-isobutyloctadecylsilyl.	1140000	ZORBAX StableBond C18 Kinetex XB-C18		278 196
Silica gel for chromatography, diisopropylcyanopropylsilyl.	1168100	ZORBAX StableBond CN		278
Silica gel for chromatography, dimethyloctadecylsilyl. irregular; area: 300 m <sup>2</sup> /g.	1115100	Bondclone C18	10	177
Silica gel for chromatography, diol dihydroxypropyl, 100 Å.	1110000	Luna HILIC	5	209
Silica gel for chromatography, dodecylsilyl, endcapped.	1179700	Synergi Max-RP		264
Silica gel for chromatography, hexadecylamidylsilyl with hexadecylcarboxamidopropyl dimethylsilyl groups.	1162500		5	
Silica gel for chromatography, hexadecylamidylsilyl, endcapped with hexadecylcarboxamidopropyl dimethylsilyl groups.	1172400		5	
Silica gel for chromatography, hexylsilyl.	1077100	SphereClone C6 PhenoSphere C6	3 to 10	261 237
Silica gel for chromatography, hexylsilyl, endcapped.	1174400	SphereClone C6 PhenoSphere C6	3 to 10	261 237
Silica gel for chromatography, human albumin coated.	1138500		3 to 10	
Silica gel for chromatography, hydrophilic surface has been modified to provide hydrophilic characteristics.	1077200	Luna HILIC	3 to 10	209
Silica gel for chromatography, nitrile cyanopropylsilyl.	1077300	Luna CN (Cyano) HyperClone CN (Cyano) PhenoSphere CN (Cyano)	3 to 10	209 193 237
Silica gel for chromatography, nitrile R1 chemically bonded nitrile groups.	1077400	Luna CN (Cyano) HyperClone CN (Cyano) PhenoSphere CN (Cyano)	3 to 10	209 193 237
Silica gel for chromatography, nitrile R2 ultrapure silica (<20 ppm metal) with cyanopropylsilyl groups.	1119500	Luna CN (Cyano) HyperClone CN (Cyano) PhenoSphere CN (Cyano)	3 to 10	209 193 237
Silica gel for chromatography, nitrile, endcapped with cyanopropylsilyl groups.	1174500	Luna CN (Cyano)	3 to 10	209
Silica gel for chromatography, octadecanoylaminopropylsilyl aminopropylsilyl groups which are acylated with octadecanoyl groups.	1115200			

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Silica gel for chromatography, octadecylsilyl.	1077500	Luna C18(2)	3 to 10	209
		Synergi Hydro-RP		264
		Synergi Fusion-RP		264
		Gemini C18		184
		Gemini NX-C18		184
		HyperClone C18		193
		Kinetex C18		196
		Kinetex XB-C18		196
Silica gel for chromatography, octadecylsilyl R1 ultrapure silica (<20 ppm metals), pore size and C-load are indicated in the method.	1110100	SphereClone C18 ODS(1) or (2)	3 to 10	261
		Luna C18(2)		209
		Synergi Hydro-RP		264
		Synergi Fusion-RP		264
		Gemini C18		184
		Gemini NX-C18		184
		Jupiter C18		307
		Kinetex C18		196
Silica gel for chromatography, octadecylsilyl R2 ultrapure silica; 150 Å pore size; 20 % C-load; optimized for the analysis of PAHs.	1115300	Kinetex XB-C18	3 to 10	196
		EnviroSep-PP Prodigy ODS-2		182 241
Silica gel for chromatography, octadecylsilyl, base-deactivated pretreated before the bonding by careful washing and hydrolyzing most of the superficial siloxane bridges to minimize the interaction with basic components.	1077600	Luna C18(2)	3 to 10	209
		Gemini C18		184
		Gemini NX-C18		184
		Kinetex C18		196
		Kinetex XB-C18		196
Silica gel for chromatography, octadecylsilyl, endcapped. To minimize any interaction with basic compounds it's carefully endcapped to cover most of the remaining silanol groups.	1115400	Luna C18(2)	3 to 10	209
		Gemini C18		184
		Gemini NX-C18		184
		Kinetex C18		196
		Kinetex XB-C18		196
Silica gel for chromatography, octadecylsilyl, endcapped R1 ultrapure silica (<20 ppm metal), 19 % C-load. To minimize any interaction with basic compounds it's carefully endcapped to cover most of the remaining silanol groups.	1115401	Luna C18	3 to 10	209
		Synergi Hydro-RP		264
Silica gel for chromatography, octadecylsilyl, endcapped, base-deactivated; pore size 100 Å, C-load:16 %, pretreated before the bonding by careful washing and hydrolyzing most of the superficial siloxane bridges. To further minimize any interaction with basic compounds it's carefully endcapped to cover most of the remaining silanol groups.	1108600	Luna C18(2)	3 to 10	209
		Prodigy ODS-3		241
		Gemini C18		184
		Gemini NX-C18		184
Silica gel for chromatography, octadecylsilyl, endcapped, base-deactivated R1; pretreated before the bonding by careful washing and hydrolyzing most of the superficial siloxane bridges. To further minimize any interaction with basic compounds it's carefully endcapped to cover most of the remaining silanol groups.	1162600	Luna C18(2)	3 to 10	209
		Gemini C18		184
		Gemini NX-C18		184
		Kinetex C18		196
		Kinetex XB-C18		196
Silica gel for chromatography, octadecylsilyl, monolithic.	1154500	Onyx C18		227
Silica gel for chromatography, octadecylsilyl, with polar embedded groups, endcapped; the particles are based on a mixture of silica chemically modified at the surface by the bonding of octadecylsilyl groups and silica chemically modified with a reagent providing a surface with chains having embedded polar groups.	1177900	(Synergi Fusion-RP)	3 to 10	264
Silica gel for chromatography, octadecylsilyl, with polar incorporated groups, endcapped; the particles are based on silica, chemically modified with a reagent providing a surface with chains having polar incorporated groups and terminating octadecyl groups.	1165100	Synergi Fusion-RP	3 to 10	264
Silica gel for chromatography, octylsilyl.	1077700	Luna C8(2)	3 to 10	209
		Prodigy C8		241
		HyperClone C8 (MOS)		193
		Kinetex C8		196
		SphereClone C8		261
Silica gel for chromatography, octylsilyl R1. Bonding of octylsilyl and methyl groups (double bonded phase).	1077701	Luna C8(2)	3 to 10	209
		Prodigy C8		241
		HyperClone C8 (MOS)		193
		Kinetex C8		196
		SphereClone C8		261
Silica gel for chromatography, octylsilyl R2 ultrapure silica (<20 ppm metal); pore size 100 Å; C-load: 19 %.	1077702		3 to 10	
Silica gel for chromatography, octylsilyl R3 ultrapure silica, bonding of octylsilyl groups and sterically protected with branched hydrocarbons at the silanes.	1155200	ZORBAX StableBond C8		278
Silica gel for chromatography, octylsilyl, base-deactivated pretreated before the bonding by careful washing and hydrolyzing most of the superficial siloxane bridges to minimize the interaction with basic components.	1131600	Luna C8(2)	3 to 10	209
		Prodigy C8		241
		HyperClone C8 (BDS)		193
		Kinetex C8		196
Silica gel for chromatography, octylsilyl, endcapped. To minimize any interaction with basic compounds it's carefully endcapped to cover most of the remaining silanol groups.	1119600	Luna C8(2)	3 to 10	209
		Prodigy C8		241
		HyperClone C8 (BDS)		193
		Kinetex C8		196
Silica gel for chromatography, octylsilyl, endcapped, base-deactivated pretreated before the bonding by careful washing and hydrolyzing most of the superficial siloxane bridges to minimize the interaction with basic components. To further minimize any interaction with basic compounds it's carefully endcapped to cover most of the remaining silanols.	1148800	Luna C8(2)	3 to 10	209
		Prodigy C8		241
		Kinetex C8		196
		HyperClone C8 (BDS)		193
Silica gel for chromatography, octylsilyl, with polar incorporated groups, endcapped; chains having polar incorporated groups and terminating octyl groups.	1152600		3 to 10	
Silica gel for chromatography, palmitamidopropylsilyl, endcapped bonding with palmitamidopropyl groups and endcapped with acetamidopropyl groups.	1161900		3 to 10	

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Silica gel for chromatography, phenylhexylsilyl.	1153900	Kinetex Phenyl-Hexyl Luna Phenyl-Hexyl Gemini C6-Phenyl	3 to 10	196 209 184
Silica gel for chromatography, phenylhexylsilyl, endcapped. 3 µm; To minimize any interaction with basic compounds it's carefully endcapped to cover most of the remaining silanol groups.	1170600	Luna Phenyl-Hexyl Gemini C6-Phenyl Kinetex Phenyl-Hexyl	3	209 184 196
Silica gel for chromatography, phenylsilyl.	1110200	Synergi Polar-RP Luna Phenyl-Hexyl Gemini C6-Phenyl Prodigy Phenyl-3 (PH3) SphereClone Phenyl Kinetex Phenyl-Hexyl	5 to 10	264 209 184 241 261 196
Silica gel for chromatography, phenylsilyl, R1 spherical silica; pore size: 80 Å; surface area: 180 m <sup>2</sup> /g; C-load: 5.5 %.	1075700	ZORBAX StableBond Phenyl	5	278
Silica gel for chromatography, phenylsilyl, endcapped. To minimize any interaction with basic compounds it's carefully endcapped to cover most of the remaining silanol groups.	1154900	Synergi Polar-RP Luna Phenyl-Hexyl Gemini C6-Phenyl Prodigy Phenyl-3 (PH3) Kinetex Phenyl-Hexyl	5 to 10	264 209 184 241 196
Silica gel for chromatography, propoxybenzene, endcapped	1174600	Synergi Polar-RP	3 to 10	264
Silica gel for chromatography, propylsilyl.	1170700		3 to 10	
Silica gel for chromatography, strong anion-exchange bonding of quaternary ammonium groups; pH limit of use: 2 to 8.	1077800	PhenoSphere SAX	3 to 10	237
Silica gel for chromatography, strong cation-exchange bonding of sulfonic acid groups.	1161400	Luna SCX	5 to 10	209
Silica gel for chromatography, trimethylsilyl.	1115500	Develosil TMS-UG (C1) Capcell Pak C1 UG PhenoSphere C1	3 to 10	181 178 237
Silica for size-exclusion chromatography. 10 µm silica with a very hydrophilic surface. Pore size average: 30 nm; pH stability 2 to 8; exclusion range for proteins: 1 x 10 <sup>3</sup> to 3 x 10 <sup>5</sup> .	1077900	BioSep-SEC-S3000	10	305
Silica gel OC for chiral separations.	1146800		5	
Silica gel OD for chiral separations.	1110300	Lux Cellulose-1	5	332
Organosilica polymer, amorphous, octadecylsilyl. Synthetic, spherical hybrid particles containing both inorganic (silica) and organic (organosiloxanes) components, chemically modified at the surface by trifunctionally bonded octadecylsilyl groups.	1144200	Gemini C18 Gemini NX-C18		184 184
Organosilica polymer, amorphous, octadecylsilyl, endcapped. Synthetic, spherical hybrid particles containing both inorganic (silica) and organic (organosiloxanes) components, chemically modified at the surface by trifunctionally bonded octadecylsilyl groups. To minimize any interaction with basic compounds, it is carefully endcapped to cover most of the remaining silanol groups.	1178600	Gemini C18 Gemini NX-C18		184 184
Organosilica polymer, amorphous, polar embedded, octadecylsilyl, endcapped. Synthetic, spherical hybrid particles containing both inorganic (silica) and organic (organosiloxanes) components, chemically modified at the surface by the bonding of polar embedded octadecylsilyl groups. To minimize any interaction with basic compounds, it is carefully endcapped to cover most of the remaining silanol groups.	1150600			
Organosilica polymer, amorphous, polar embedded propyl-2-phenylsilyl, endcapped. Synthetic, spherical hybrid particles containing both inorganic (silica) and organic (organosiloxanes) components, chemically modified at the surface by the bonding of polar embedded propyl-2-phenylsilyl groups. To minimize any interaction with basic compounds, it is carefully endcapped to cover most of the remaining silanol groups.	1178100			
Organosilica polymer for mass spectrometry, amorphous, octadecylsilyl, endcapped. Synthetic, spherical hybrid particles containing both inorganic (silica) and organic (organosiloxanes) components. To minimize any interaction with basic compounds, it is carefully endcapped to cover most of the remaining silanol groups.	1164900	Gemini C18 Gemini NX-C18		184 184
Vinyl polymer for chromatography, octadecyl. Spherical particles (5 µm) of a vinyl alcohol copolymer, bonding of octadecyl groups on the hydroxyl groups.	1155400	Asahipak ODP-50	5	176
Vinyl polymer for chromatography, octadecylsilyl. Spherical particles (5 µm) of a vinyl alcohol copolymer bonded to an octadecylsilane. C-load: 17 %.	1121600	Asahipak ODP-50	5	176
Ion-exclusion resin for chromatography. A resin with sulfonic acid groups attached to a polymer lattice consisting of polystyrene cross-linked with divinylbenzene.	1131000	Rezex ROA-Organic Acid Rezex RHM-Monosaccharide		243 243
Cation-exchange resin, strong. Strong cation-exchange resin in protonated form with sulfonic acid groups attached to a polymer lattice consisting of polystyrene cross-linked with divinylbenzene.	1156800	Rezex ROA-Organic Acid Rezex RHM-Monosaccharide		243 243
Cation-exchange resin (Calcium form), strong. Resin in calcium form with sulfonic acid groups attached to a polymer lattice consisting of polystyrene cross-linked with 8 % divinylbenzene	1104600	Rezex RCM-Monosaccharide Rezex RCU-USP Sugar Alcohols		243 243
Cation-exchange resin (Sodium form), strong. Resin in sodium form with sulfonic acid groups attached to a polymer lattice consisting of polystyrene cross-linked with divinylbenzene.	1176100	Rezex RNM-Carbohydrate		243 243