

Welch HPLC Column Selection by USP Listing

| HPLC Column | Particle Size | pH Range | Carbon Loading | Surface Area(m ² /g) | Endcapped |
|---|---------------|----------|----------------------|---------------------------------|-----------|
| L1: Octadecyl silane chemically bonded to porous silica or ceramic microparticles, 1.5 to 10 µm in diameter, or a monolithic rod. | | | | | |
| Ultisil XB-C18 | 3, 5, 10 µm | 1.5-10.0 | 17%(120Å), 8%(300Å) | 320(120Å), 90(300Å) | Yes |
| Ultisil AQ-C18 | 3, 5, 10 µm | 1.5-10.0 | 12%(120Å) | 320(120Å) | Yes |
| Ultisil LP-C18 | 3, 5, 10 µm | 0.5-8.0 | 10%(120Å), 5%(300Å) | 320(120Å), 90(300Å) | No |
| Ultisil LP-AQ | 5 µm | 1.0-8.0 | 5%(120Å) | 320(120Å) | No |
| Ultisil Polar-RP | 3, 5, 10 µm | 1.5-10.0 | 18%(120Å) | 320(120Å) | Yes |
| Ultisil AA(Amino Acid) | 5 µm | 1.5-10.0 | 17%(120Å) | 320(120Å) | Yes |
| Ultisil PAH | 3, 5 µm | 1.5-10.0 | 22%(120Å) | 320(120Å) | No |
| Ultisil ALK C18 | 5 µm | 1.5-10.0 | 12%(120Å) | 320(120Å) | Yes |
| Ultisil Plus C18 | 3.5, 5 µm | 2.0-8.0 | 10%(130Å) | 160(130Å) | Yes |
| Ultisil ODS-3 | 3, 5 µm | 2.0-8.0 | 15%(100Å) | 380(100Å) | Yes |
| Ultisil XS-C18 | 3, 5 µm | 2.0-10.0 | 23%(120Å) | 320(120Å) | Yes |
| Xtimate C18 | 3, 5, 10 µm | 1.0-12.5 | 14%(120Å) | 320(120Å) | Yes |
| Xtimate Polar-RP | 5 µm | 1.0-12.5 | 16%(120Å) | 320(120Å) | Yes |
| Welchrom C18 | 5 µm | 1.5-10.0 | 19%(120Å) | 320(120Å) | Yes |
| Topsil C18 | 3, 5 µm | 2.0-9.5 | 12%(150Å) | 260(150Å) | Yes |
| Boltimate C18(Core-shell) | 2.7 µm | 2.0-8.5 | 9%(90Å) | 120(90Å) | Yes |
| Boltimate EXT-C18(Core-shell) | 2.7 µm | 1.5-12.0 | 8%(90Å) | 120(90Å) | Yes |
| Boltimate LP-C18(Core-shell) | 2.7 µm | 1.0-8.5 | 7%(90Å) | 120(90Å) | No |
| Ultisil UHPLC XB-C18 | 1.8 µm | 1.5-10.0 | 17%(120Å) | 320(120Å) | Yes |
| Ultisil UHPLC AQ-C18 | 1.8 µm | 1.5-10.0 | 12%(120Å) | 320(120Å) | Yes |
| Ultisil UHPLC LP-C18 | 1.8 µm | 0.5-8.0 | 10%(120Å) | 320(120Å) | No |
| Ultisil UHPLC Polar-RP | 1.8 µm | 1.5-10.0 | 18%(120Å) | 320(120Å) | Yes |
| Xtimate UHPLC C18 | 1.8 µm | 1.0-12.5 | 14%(120Å) | 320(120Å) | Yes |
| L3: Porous silica particles, 1.5 to 10 µm in diameter, or a monolithic silica rod. | | | | | |
| Ultisil SiO ₂ | 3, 5, 10 µm | 2.0-8.0 | N/A | 320(120Å), 90(300Å) | No |
| Ultisil HILIC Silica | 3, 5, 10 µm | 2.0-8.0 | N/A | 320(120Å) | No |
| Ultisil UHPLC HILIC | 1.8 µm | 2.0-8.0 | N/A | 320(120Å) | No |
| Topsil Silica | 5 µm | 2.0-8.0 | N/A | 260(150Å) | No |
| Boltimate HILIC | 2.7 µm | 2.0-8.5 | N/A | 120(90Å) | No |
| L7: Octyl silane chemically bonded to totally porous silica particles, 1.5 to 10 µm in diameter, or a monolithic silica rod. | | | | | |
| Ultisil XB-C8 | 3, 5, 10 µm | 1.5-10.0 | 12%(120Å), 4%(300Å) | 320(120Å), 90(300Å) | Yes |
| Ultisil LP-C8 | 3, 5 µm | 1.0-8.0 | 5.5%(120Å), 3%(300Å) | 320(120Å), 90(300Å) | No |
| Ultisil F-C8 | 3, 5 µm | 1.5-10.0 | 12%(120Å) | 320(120Å) | Yes |
| Xtimate C8 | 3, 5, 10 µm | 1.0-12.5 | 10%(120Å) | 320(120Å) | Yes |
| Welchrom C8 | 5 µm | 1.5-10.0 | 12%(120Å) | 320(120Å) | Yes |
| Topsil C8 | 3, 5 µm | 2.0-9.5 | 10%(150Å) | 260(150Å) | Yes |
| Ultisil UHPLC XB-C8 | 1.8 µm | 1.5-10.0 | 12%(120Å) | 320(120Å) | Yes |
| L8: An essentially monomolecular layer of aminopropyl-silane chemically bonded to totally porous silica gel support, 3 to 10 µm in diameter. | | | | | |
| Ultisil XB-NH ₂ | 3, 5, 10 µm | 2.0-8.0 | 4%(120Å) | 320(120Å) | No |
| Ultisil HILIC-NH ₂ | 3, 5, 10 µm | 2.0-8.0 | 4%(120Å) | 320(120Å) | No |
| Topsil NH ₂ | 5 µm | 2.0-8.0 | 3%(150Å) | 260(150Å) | No |
| Topsil HILIC-NH ₂ | 5 µm | 2.0-8.0 | 3%(150Å) | 260(150Å) | No |
| Xtimate Lactose-NH ₂ | 5 µm | 2.0-8.0 | 7%(120Å) | 450(120Å) | No |
| L9: Irregular or spherical, totally porous silica gel having a chemically bonded, strongly acidic cation-exchange coating, 3 to 10 µm in diameter. | | | | | |
| Ultisil XB-SCX | 3, 5, 10 µm | 2.0-8.0 | 12%(120Å), 5%(300Å) | 320(120Å), 90(300Å) | No |
| Xtimate XB-SCX | 5 µm | 2.0-8.0 | 2%(120Å) | 300(120Å) | No |
| L10: Nitrile groups chemically bonded to porous silica particles, 3 to 10 µm in diameter. | | | | | |
| Ultisil XB-CN | 3, 5, 10 µm | 1.5-9.0 | 7%(120Å) | 320(120Å) | Yes |
| Ultisil LP-CN | 5 µm | 1.0-8.0 | 6%(120Å) | 320(120Å) | No |
| Xtimate CN | 5 µm | 1.0-12.5 | 7%(120Å) | 320(120Å) | Yes |
| Topsil CN | 5 µm | 2.0-8.0 | 6%(150Å) | 260(150Å) | Yes |
| L11: Phenyl groups chemically bonded to porous silica particles, 1.5 to 10 µm in diameter. | | | | | |
| Ultisil XB-Phenyl | 3, 5, 10 µm | 1.5-10.0 | 12%(120Å), 4%(300Å) | 320(120Å), 90(300Å) | Yes |
| Ultisil Phenyl-Ether | 5 µm | 1.5-10.0 | 12%(120Å) | 320(120Å) | Yes |
| Ultisil PFP | 3, 5 µm | 1.5-10.0 | 12%(120Å) | 320(120Å) | Yes |
| Xtimate Phenyl-hexyl | 3, 5 µm | 1.0-12.5 | 12%(120Å) | 320(120Å) | Yes |
| Topsil Phenyl-hexyl | 3, 5 µm | 2.0-9.5 | 12%(150Å) | 260(150Å) | Yes |
| Boltimate Phenyl-hexyl(Core-shell) | 2.7 µm | 2.0-8.5 | 7%(90Å) | 120(90Å) | Yes |
| Boltimate EXT-PFP(Core-shell) | 2.7 µm | 1.5-12.0 | 5%(90Å) | 120(90Å) | Yes |
| Ultisil UHPLC XB-Phenyl | 1.8 µm | 1.5-10.0 | 12%(120Å) | 320(120Å) | Yes |
| L13: Trimethylsilane chemically bonded to porous silica particles, 3 to 10 µm in diameter. | | | | | |
| Ultisil XB-C1 | 5 µm | 1.5-10.0 | 4%(120Å) | 320(120Å) | Yes |

| HPLC Column | Particle Size | pH Range | Carbon Loading | Surface Area(m ² /g) | Endcapped |
|--|---------------|----------|------------------------|---------------------------------|-----------|
| L14: Silica gel having a chemically bonded, strongly basic quaternary ammonium anion-exchange coating, 5 to 10 µm in diameter. | | | | | |
| Ultisil XB-SAX | 3, 5, 10 µm | 2.0-8.0 | 7.5%(120Å), 1.5%(300Å) | 320(120Å), 90(300Å) | No |
| L17: Strong cation-exchange resin consisting of sulfonated cross-linked styrene-divinylbenzene copolymer in the hydrogen form, 7 to 11 µm in diameter. | | | | | |
| Xtimate Sugar-H | 5, 8 µm | 1.0-3.0 | N/A | N/A | N/A |
| L19: Strong cation-exchange resin consisting of sulfonated cross-linked styrene-divinylbenzene copolymer in the calcium form, 9 µm in diameter. | | | | | |
| Xtimate Sugar-Ca | 5, 8 µm | 5.0-9.0 | N/A | N/A | N/A |
| L20: Dihydroxypropane groups chemically bonded to porous silica particles, 1.5 to 10 µm in diameter. | | | | | |
| Ultisil Diol | 3, 5, 10 µm | 2.0-8.0 | 2.5%(120Å) | 320(120Å) | No |
| L21: A rigid, spherical styrene-divinylbenzene copolymer, 3 to 30 µm in diameter. | | | | | |
| Xtimate PS/DVB | 5, 10 µm | 1.0-14.0 | N/A(100Å, 300Å) | N/A | N/A |
| L22: A cation-exchange resin made of porous polystyrene gel with sulfonic acid groups, about 10 µm in size. | | | | | |
| Xtimate Sugar-H | 5, 8 µm | 1.0-3.0 | N/A | N/A | N/A |
| L26: Butyl silane chemically bonded to totally porous silica particles, 3 to 10 µm in diameter. | | | | | |
| Ultisil XB-C4 | 3, 5, 10 µm | 1.5-10.0 | 8%(120Å), 3%(300Å) | 320(120Å), 90(300Å) | Yes |
| Xtimate C4 | 3, 5 µm | 1.0-12.5 | 8%(120Å) | 320(120Å) | Yes |
| L33: Packing having the capacity to separate dextrans of 4,000 to 500,000 daltons. It is spherical, silica-based and processed to provide pH stability. | | | | | |
| Xtimate SEC-120 | 3, 5 µm | 2.0-7.5 | N/A(120Å) | N/A | N/A |
| Xtimate SEC-300 | 3, 5 µm | 2.0-7.5 | N/A(300Å) | N/A | N/A |
| Xtimate SEC-500 | 5 µm | 2.0-7.5 | N/A(500Å) | N/A | N/A |
| Xtimate SEC-700 | 5 µm | 2.0-7.5 | N/A(700Å) | N/A | N/A |
| Xtimate SEC-1000 | 5 µm | 2.0-7.5 | N/A(1000Å) | N/A | N/A |
| L40: Cellulose tris-3,5-dimethylphenylcarb-amate coated porous silica particles, 5 to 20 µm in diameter. | | | | | |
| Ultisil Cellu-D/Cellu-DR | 5, 10 µm | 2.0-9.0 | N/A | 320(120Å) | N/A |
| L43: Pentafluorophenyl groups chemically bonded to silica particles 5 to 10 µm in diameter. | | | | | |
| Ultisil PFP | 3, 5 µm | 1.5-10.0 | 13%(120Å) | 320(120Å) | Yes |
| Boltimate EXT-PFP(Core-shell) | 2.7 µm | 1.5-12.0 | 5%(90Å) | 120(90Å) | Yes |
| L51: Amylose tris-3,5-dimethylphenylcarbamate-coated, porous, spherical, silica particles, 5 to 10 µm in diameter. | | | | | |
| Ultisil Amy-D/Amy-DR | 5, 10 µm | 2.0-9.0 | N/A | 320(120Å) | N/A |
| L56: Propyl silane chemically bonded to totally porous silica particles, 3 to 10 µm in diameter. | | | | | |
| Ultisil LP-C3 | 5 µm | 1.0-8.0 | 4%(120Å) | 320(120Å) | No |
| L59: Packing having the capacity to separate proteins by molecular weight over the range of 5 to 7000 kDa. It is spherical (1.5-10 µm), silica-based, and processed to provide hydrophilic characteristics and pH stability. | | | | | |
| Xtimate SEC-120 | 3, 5 µm | 2.0-7.5 | N/A(120Å) | N/A | N/A |
| Xtimate SEC-300 | 3, 5 µm | 2.0-7.5 | N/A(300Å) | N/A | N/A |
| Xtimate SEC-500 | 5 µm | 2.0-7.5 | N/A(500Å) | N/A | N/A |
| Xtimate SEC-700 | 5 µm | 2.0-7.5 | N/A(700Å) | N/A | N/A |
| Xtimate SEC-1000 | 5 µm | 2.0-7.5 | N/A(1000Å) | N/A | N/A |
| L60: Spherical, porous silica gel, 10 µm or less in diameter, surface has been covalently modified with alkyl amide groups and endcapped. | | | | | |
| Ultisil Polar-RP | 3, 5, 10 µm | 1.5-10.0 | 18%(120Å) | 320(120Å) | Yes |
| Xtimate Polar-RP | 5 µm | 1.0-12.5 | 16%(120Å) | 320(120Å) | Yes |
| Ultisil UHPLC Polar-RP | 1.8 µm | 1.5-10.0 | 18%(120Å) | 320(120Å) | Yes |
| L62: C30 silane bonded phase on a fully porous spherical silica, 3 to 15 µm in diameter. | | | | | |
| Ultisil XB-C30 | 3, 5, 10 µm | 1.5-10.0 | 22%(120Å) | 320(120Å) | Yes |
| L80: Cellulose tris(4-methylbenzoate)-coated, porous, spherical, silica particles, 5 µm in diameter. | | | | | |
| Ultisil Cellu-J/Cellu-JR | 5, 10 µm | 2.0-9.0 | N/A | 320(120Å) | N/A |
| Not Included in USP List | | | | | |
| Ultisil HILIC Amide | 3, 5, 10 µm | 2.0-8.0 | 7%(120Å) | 320(120Å) | N/A |
| Ultisil HILIC Amphion II | 5 µm | 2.0-8.0 | 6%(120Å) | 320(120Å) | N/A |
| Ultisil Amy-S/Amy-SR | 5, 10 µm | 2.0-9.0 | N/A | 320(120Å) | N/A |
| Ultisil MM NH ₂ /CN | 5 µm | 2.0-8.0 | N/A(120Å) | 320(120Å) | N/A |
| Ultisil MM C18/SCX | 5 µm | 2.0-8.0 | N/A(120Å) | 320(120Å) | N/A |