ZirChrom®

Technical Bulletin #154

... For Peak Performance

ZirChrom® Column Information & Fact Sheet

ZirChrom's analytical columns are packed with 3µm particles (other particles sizes available upon request). All particles sizes have 300 Å pores. ZirChrom phases offer unique selectivity, high efficiency, and excellent chemical and thermal stability.

Reversed Phase Columns

ZirChrom®-PBD - This highly efficient phase is created by coating zirconia particle with an extremely thin layer of crosslinked polybutadiene. For non-electrolytes, selectivity is similar to the typical C18 silica however it is less hydrophobic than typical C18 silica. Selectivity for ionic solutes is modifiable through the addition of a strong Lewis base to the mobile phase such as fluoride, phosphate, or hydroxide. (*pH Range: 1-14, Temperature Limit: 150 ºC)*

ZirChrom®-CARB - Phase is created by coating the zirconia particle with an extremely thin layer of elemental carbon. Selectivity is vastly different than ZirChrom®-PBD and this phase is much more retentive. ZirChrom®-CARB is extremely sensitive to small shape differences in molecules and is ideal for separations of diastereomers, geometric isomers or closely related metabolites. (*pH Range: 1-14, Temperature Limit: 200 ºC)*

Diamondbond®-C18 - Phase is created by covalently bonding a C18 ligand to the surface of carbon-clad zirconia. Selectivity is in between that of ZirChrom®-PBD and ZirChrom®-CARB. Efficiency is higher than ZirChrom-CARB. (*pH Range: 1-14, Temperature Limit: 200 ºC)*

ZirChrom®-EZ - This highly efficient phase is created by first coating zirconia particle with an extremely thin layer of crosslinked polybutadiene and then deactivating the Lewis acid sites by applying a strong metal chelator. Designed for the chromatography of Lewis base analytes at low pH with LC/MS detection. (*pH Range: 1-10, Temperature Limit: 50 ºC)*

ZirChrom®-PS - Phase is created by coating the zirconia particle with an extremely thin layer of polystyrene. ZirChrom®-PS has an alternative selectivity, is less retentive and is ideal for non-polar analytes and highly aqueous mobile phases. (*pH range: 1-13, Temperature Limit:150 ºC)*

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Ion Exchange Phases

ZirChrom®-SAX - This highly efficient phase is created by coating zirconia particle with an extremely thin layer of crosslinked polyethyleneimine. ZirChrom®-SAX is a strong anion exchanger that is useful for the separation of inorganic anions, organic anions and of bio-molecules such as nucleotides, nucleosides, oligonucleotides, oligodeoxynucleotides, aminoacids, and peptides. (*pH Range: 1-12, Temperature Limit: 80 ºC)*

ZirChrom®-SHAX - Phase is created by coating zirconia particle with an extremely thin layer of quaternized polyethyleneimine. ZirChrom®-SHAX is a strong hydrophilic anion exchanger and has all the advantages of ZirChrom®-SAX except that the surface is much more hydrophilic making it useful for anion-exchange of proteins. (*pH Range: 1-12, Temperature Limit: 80 ºC)*

ZirChrom®-WAX - This highly efficient phase is created by coating zirconia particle with an extremely thin layer of crosslinked polyethyleneimine. ZirChrom®-WAX is a weak anion exchanger that is useful for the separation of inorganic anions, organic anions and biomolecules. It is also an extremely stable amino phase for normal phase separation of carbohydrates. (*pH Range: 3-9, Temperature Limit: 50 ºC)*

ZirChrom®-WCX - Phase is created by coating zirconia particle with an extremely thin layer of phosphate. ZirChrom®-WCX is weak cation exchanger that is useful for protein chromatography in the cation-exchange mode. (*pH Range: 1-10, Temperature Limit: 50 ºC)*

ZirChrom®-PEZ - Phase is created by coating zirconia particle with an extremely thin layer of EDTPA. ZirChrom®-PEZ is a cation exchanger that is useful for protein chromatography in the cation-exchange mode and excellent for monoclonal antibody separations. (*pH range: 1-10, Temperature Limit: 50 ºC)*

In-Line Protein Removal

ProTain™- This system provides for simple but highly effective removal of matrix proteins from samples. Incorporation of the system in front of any type of analytical column offers a selective, cost effective, and simple method of reducing matrix interferences for the HPLC analysis of small molecules in bio-samples. (*pH Range: 1-14, Temperature Limit: 100 ºC)*