

# Cogent TYPE-C™ Silica for Reversed-Phase (RP) HPLC

## VALUE PROPOSITION:

Improve your method development, run time and column lifetime by using Cogent TYPE-C™ silica-hydride technology in the Reversed-Phase mode. Take a competitive edge in your industry and make an impact on your company's bottom line by lowering the cost of analysis. Produce 'greener' applications and take advantage of the time and solvent savings these columns can provide. Cogent™ HPLC columns can make your difficult methods more robust and reliable. Using these columns is simple and the lifetime support from MicroSolv makes bringing them to the lab a smooth (even enjoyable) and valid process.

Reversed-phase (RP) HPLC is the most commonly used HPLC technique and in many cases is the first choice for method development of small molecules.

In RP chromatography analytes partition between a non-polar (hydrophobic) stationary phase and a polar mobile phase (the opposite or 'reverse' of normal-phase). In general terms, analytes elute according to their hydrophobicity, with the more polar compounds eluting first and the less polar compounds eluting last. Mobile phases generally consist of a binary mixture of water and polar organic solvent, such as acetonitrile or methanol. Retention times increase as the percentage of the most polar solvent (water) increases. Typical bonded phases for RP include alkyl hydrocarbons, with C18 being the most common.

Due to its unique silica surface, Cogent TYPE-C silica can be bonded via a hydrosilation reaction with many chemical moieties which possess either a double or triple bond. The resulting direct chemical bonds between silicon and carbon make these phases much more stable than other columns and resistant to conditions that can cause hydrolysis such as very low pH. Phases show excellent lot to lot consistency, precision from run to run and little or no silanol activity. This results in greatly improved column lifetime which in turn relates to lower costs and more throughput in your lab.

All TYPE-C silica stationary phases display some degree of RP behaviour. Even the unmodified Cogent Silica-C™ can retain non-polar compounds due to the hydride surface being slightly hydrophobic. As the hydrophobicity of the stationary phases is increased by having greater surface coverage of bonded organic ligands, retention of non-polar compounds increases, just as with other (Type B) reversed-phase materials. The main TYPE-C™ silica columns recommended for RP separations are Cogent Bidentate C18™, Cogent Bidentate C8™ and Cogent UDC-Cholesterol™, but Cogent Phenyl Hydride™ and Cogent Diol™ may also be used.

Cogent TYPE-C phases are ideal for generic or USP methods, as separations can easily be transferred on to these columns.

## Application areas:

Reversed-phase HPLC and LC-MS are widely utilized in the majority of industry sectors, including food and beverage, pharmaceutical, clinical, environmental, forensic and others. Cogent TYPE-C silica columns can provide benefits in all these fields.