Direct Silicon to Carbon Bond Defined for TYPE-C Columns - HPLC Primer

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What Makes Cogent TYPE-C™ Columns Different? The Bonding Chemistry

In traditional Type A and Type B silica-based stationary phases, the organosilane starting material contains an Si–O–Si–C linkage. When bonded to the silica surface, the resulting ligand retains this oxygen bridge, which is highly susceptible to hydrolysis under typical HPLC conditions.

Cogent TYPE-C™ phases take a fundamentally different approach: the bonding reaction forms a direct Si–C bond, eliminating the hydrolytically weak oxygen link. This silicon–carbon bond is exceptionally strong—comparable in stability to a carbon–carbon bond—and requires both a specific catalyst and significant energy to break.

The result? Unmatched durability and resistance to hydrolysis, even under aggressive conditions, making TYPE-C™ columns ideal for demanding applications where longevity and reproducibility are critical.

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