

Do Cogent TYPE-C Silica columns have a partial positive charge and if so is retention for basic compounds reduced because of this – Tech Information

No!

Studies using zeta potential experiments have shown that the **Cogent TYPE-C Silica™ stationary phases have a negative charge** due to the presence of adsorbed hydroxide ions on the surface that are from the auto-dissociation of water.

Retention for basic compounds is therefore not reduced. With ordinary silica, silanols on the surface which can have a negative charge adversely affect the peak shape of basic compounds. On TYPE-C Silica™, the negative charge comes from the hydroxide ions, not silanols, so these peak shape issues are avoided. With acidic compounds, good retention can be obtained using an ammonium acetate or formate **buffer** so that the acids will be ionized.

Reference:

[C. Kulsing, Y. Nolvachai, P.J. Marriott, R.I. Boysen, M.T. Matyska, J.J. Pesek, M.T.W. Hearn, "Insights into the Origin of the Separation Selectivity with Silica Hydride Adsorbents," *J. Phys. Chem. B.*, 119 (2015), 3063-3069.



Printed from the Chrom Resource Center

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Date: 06-05-2024