The effect of ionic strength of the mobile phase additive for HPLC columns in Aqueous Normal Phase – Tips & Suggestions

Ionic strength of additives can affect your retention times.

Ionic strength has a smaller or lesser effect in Cogent TYPE-C™ columns when used in Aqueous Normal Phase (ANP) than in methods with HILIC columns because the ANP mechanism is a type of “competitive adsorption” in the adsorbed layer with Acetonitrile, on the silica-hydride surface.

Ionic strength would be expected to have some impact on this processes. Using a lower amount of buffer agents such as formic acid with optimal retention can be a large advantage to using ANP methods. The charts below show examples of 4 compounds and the effect of formic acid in the mobile phase on retention.

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