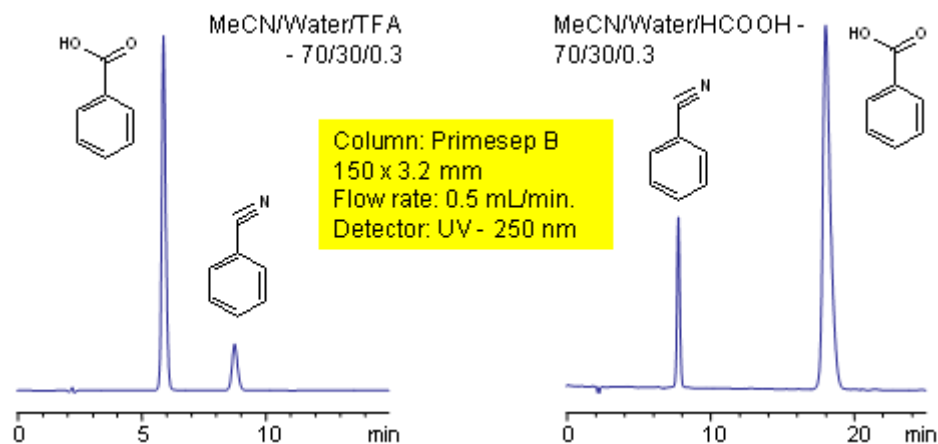


Acid Effect on Retention of Acidic Analytes

<https://sielc.com/Application-Acid-Effect-on-Retention-of-Acidic-Analytes>

Chromatogram



Description

In mixed-mode chromatography, retention time and elution order can be changed for acidic analytes based on the pH of the mobile phase. In this application, the order of elution for benzoic acid and benzonitrile is changed by changing the pH of the mobile phase. At lower pH (pH-2, TFA), ionization of carboxylic acid fragment of benzoic acid is totally suppressed (not ionized), and benzoic acid does not show any anion-exchange properties. As the pH of the mobile phase increases (pH 4, formic acid), the carboxylic acid fragment of benzoic acid is ionized and participates in ion-exchange interaction with positively charged sites of the mixed-mode column. In most cases, changing pH does not change retention of neutral analytes. Mixed-mode chromatography is compatible with all detection techniques (UV, ELSD, CAD, LC/MS, etc.)