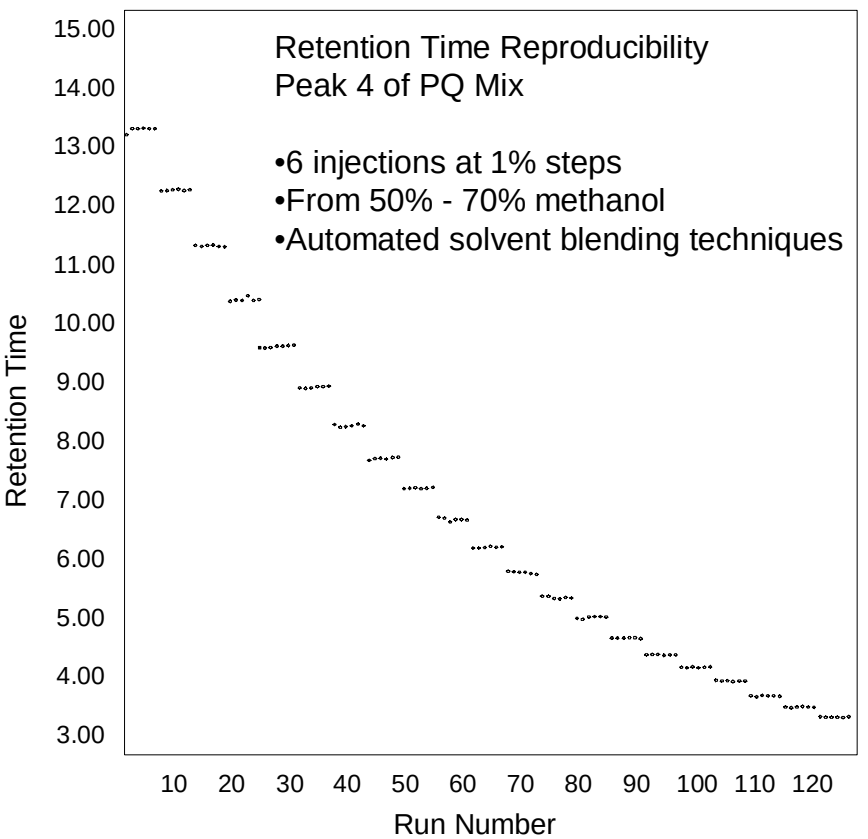
Performance PerSPECtives

Waters Alliance® System

Accurate and Reproducible Automated Solvent Blending

The ability to accurately and reproducibly deliver any desired solvent composition with the Waters Alliance Separations Module has been demonstrated with the following experiment. Twenty different compositions of solvent in 1% increments were programmed and delivered, with six injections of the Performance Qualification mix at each composition. In no case do the retention time points for any of the compositions overlap the neighboring sets of data points. This illustrates that reliable and reproducible results can be a reality with this automated solvent blending technique. In fact, the performance of the Alliance is such that better results are possible with automated solvent blending than from chromatographer to chromatographer premixing solvents for an isocratic separation. This experiment shows the excellent performance capabilities of the Waters Alliance Separations Module utilizing automated solvent blending.



Waters

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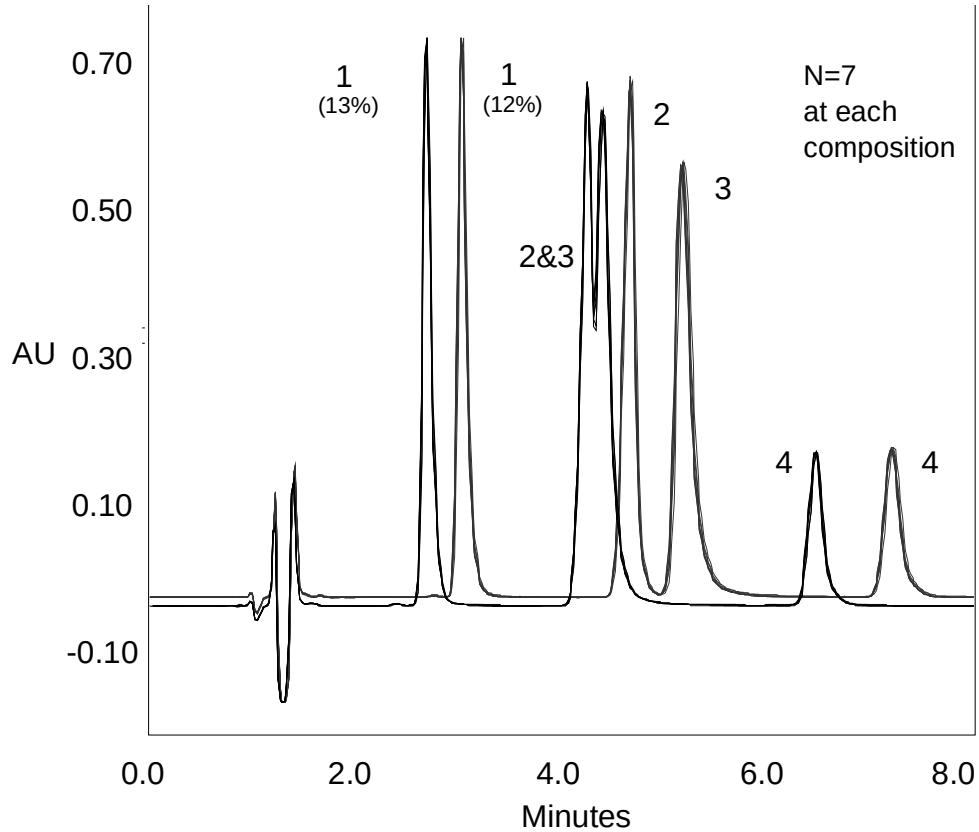
Automated Solvent Blending Performance

This experiment uses a chemistry designed to separate soft drink additives to show the automated solvent composition capabilities of the Waters Alliance Separations Module. The chromatograms below depict a series of seven injections at each of 12 and 13% organic composition. At each concentration, the Alliance performs reproducibly and with predictable results to the separation. As shown, this chemistry is sensitive to slight (1%) changes in the solvent composition. The Alliance can automate delivery of any given composition within the variances required by this method to give reproducible results. In this example, composition is critical for baseline resolution of two of the sample components. Would we be able to use laboratory glassware to achieve this level of solvent compositional accuracy and reproducibility?



Waters Alliance System:
Waters Alliance Separations Module
Waters 486 UV Detector
Automated Solvent Composition
A= KH_2PO_4, pH=4.4
B= 12% CH3CN
B= 13% CH3CN

Nova-Pak® C_{18} , 3.9 x 150mm,
1.0 mL/min
UV at 214 nm
Peaks
1 - Caffeine
2 - Benzoic Acid
3 - Aspartame
4 - Sorbic Acid