

The following chromatograms show a sample containing low boiling compounds analyzed on a 0.25, 1.0, and 5.0 μ m column with all other variables held constant. Notice that the 0.25 μ m column does not resolve butanol from benzene (peaks 1 & 2). The 1.0 μ m column provides about 80% resolution of this pair. Note that the retention times of the compounds eluting on the 0.25 μ m column more than double on the 1.0 μ m column. Now, compare the 5.0 μ m to the 0.25 and 1.0 μ m columns. The resolution between butanol and benzene (peaks 1 & 2) is not any better than the 1.0 μ m column, and the retention times have increased six times over the 0.25 μ m. For this particular sample, the 1.0 μ m column is best. The resolution is better than the 0.25 μ m column and the 5.0 μ m column does not offer any additional improvements. If our true interest was in resolving the compounds prior to butanol (peak 1), then the 5.0 μ m column would be the preferred film thickness.

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Film Thickness Effects

A sample containing low boiling components shows the differences in resolution between 0.25, 1.0, and 5.0 μ m columns. The 1.0 μ m offers better resolution than the 0.25 μ m and the 5.0 μ m does not offer any further improvements for compounds eluting after C6.

