Phenyl

Mechanisms of Separation	Strength of Interaction
π-π interactions	Strong
Dipole-dipole interactions	Moderate
Hydrophobic binding interactions	Moderate

Target Analytes

- Analytes with π bonding
- Analytes with electron delocalization and electron-withdrawing groups, such as halogens, nitro groups, ketones, esters, and acids
- Analytes with proton donor groups
- Analytes with different dipole moments

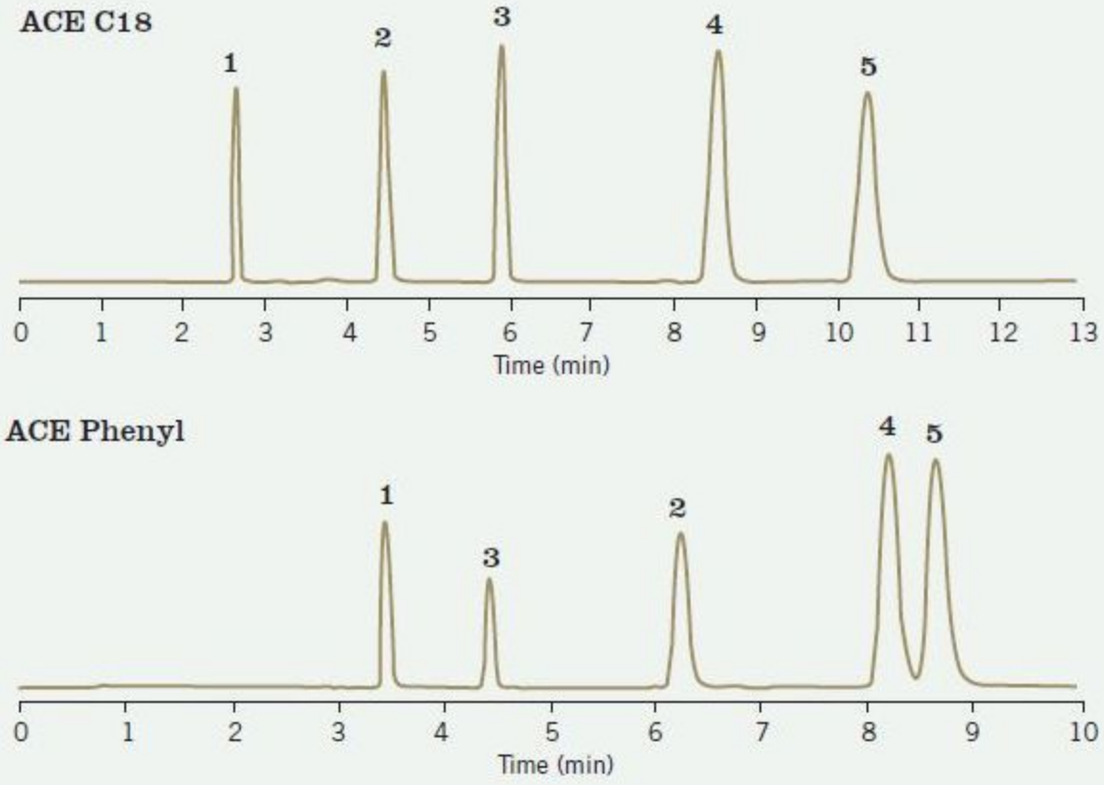
Recommended Applications

- Stereoisomers
- Steroids
- Taxanes
- Substituted aromatics
- Highly aqueous conditions

FIGURE 27: Comparison of Selectivity differences between C18 and Phenyl phases

Column: 4.6 x 250 mm, 5.0 µm
Mobile Phase: 20% 0.025M KH_2PO_4, pH 6.0
80% MeOH
Flow Rate: 1.0 mL/min
Temperature: 22 °C

1. Norephedrine
2. Nortriptyline
3. Toluene
4. Imipramine
5. Amitriptyline



These comparison chromatograms show the substantial differences in selectivity between a C18 and a phenyl phase. Peaks 2 and 3 have reversed elution order on the phenyl phase compared to the C18 phase