Distinct Selectivity of ZORBAX SB-Phenyl and SB-C18 Bonded Phases

Application
Technical
Robert Ricker

Below is a comparison of analyses of UV absorbers in sunscreen lotion. Note, peak 4 elutes last when sunscreen extract is resolved on ZORBAX SB-C18. Peak 4, however, elutes second when separated on ZORBAX SB-Phenyl. In this example, change in selectivity ($\alpha$) is not due to mobile phase or temperature (constant), but is due to use of a different stationary phase. Distinct selectivity of stationary phases is useful especially in method development, or, for example, when a specific mobile phase is favored to keep the sample soluble after injection.

Highlights

- Change of bonded phase is a quick method development tool for changing resolution and selectivity (see peak #4).

- ZORBAX StableBond columns are unsurpassed in stability at low pH, including 0.1% TFA (pH 2.1).

- Symmetrical peaks provide for rugged quantitation.

Conditions: LC: Agilent 1100
Columns: ZORBAX SB-Phenyl, 4.6 x 150 mm (3.5 µm), Agilent P/N: 863953-912
ZORBAX SB-C18, 4.6 x 150 mm (3.5 µm), Agilent P/N: 863953-902
Mobile Phase: MeOH : H$_2$O, 84:16, 0.1% TFA; pH 2.0
UV: 310 nm; Flow: 1.0 mL / min.; 30°C