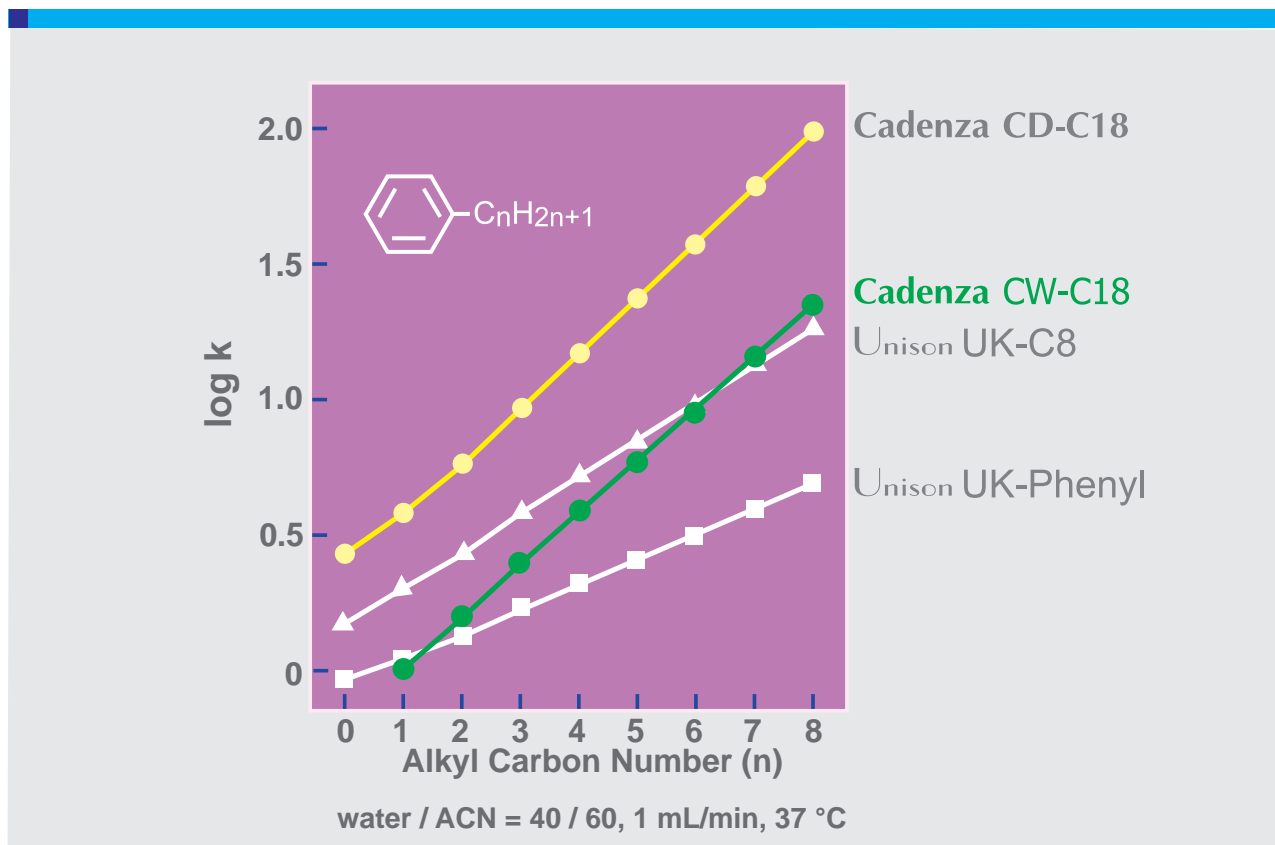


Cadenza CW-C18

Technical

Retention and hydrophobic properties of Cadenza CW-C18



Ref) N.Tanaka *et.al.*, J. Chromatg. Sci., 27, 721 (1989)

Cadenza CW-C18 is a high-throughput and high-resolution ODS phase which consists of 3µm silica particle and 30nm pore size. The specific surface area of CW-C18 is 1/3 of Cadenza CD-C18 due to the larger pore size - resulting in less retention than a conventional ODS phase.

The figure above shows the relationship between retention factor and the alkyl carbon number (n) of alkylbenzene solutes. Hydrophobicity is defined as the molecular recognition of a methylene group (e.g. alpha for two compounds differing by a CH₂ group). The graph shows that for C₃ or larger solutes, there is a linear relationship between retention and carbon chain length.

Retention properties (log k) on CW-C18 are lower than CD-C18 and similar to C8 (Unison UK-C8). This should result in faster elution of highly hydrophobic compounds, while offering different selectivity than a C8 phase (apparent by the different slopes between the two phases).

In contrast, the slopes are almost parallel between CW-C18 and CD-C18. This shows that hydrophobicity for CW-C18 and CD-C18 are almost identical (a result of the ligand density being almost equal).

In conclusion, CW-C18 has the same hydrophobic selectivity as CD-C18, and can provide faster elution than conventional ODS. Moreover, CW-C18 is a high resolution ODS phase using 3µm silica particle, with an opportunity to provide faster analysis by replacing conventional ODS with CW-C18 under the same operating conditions.