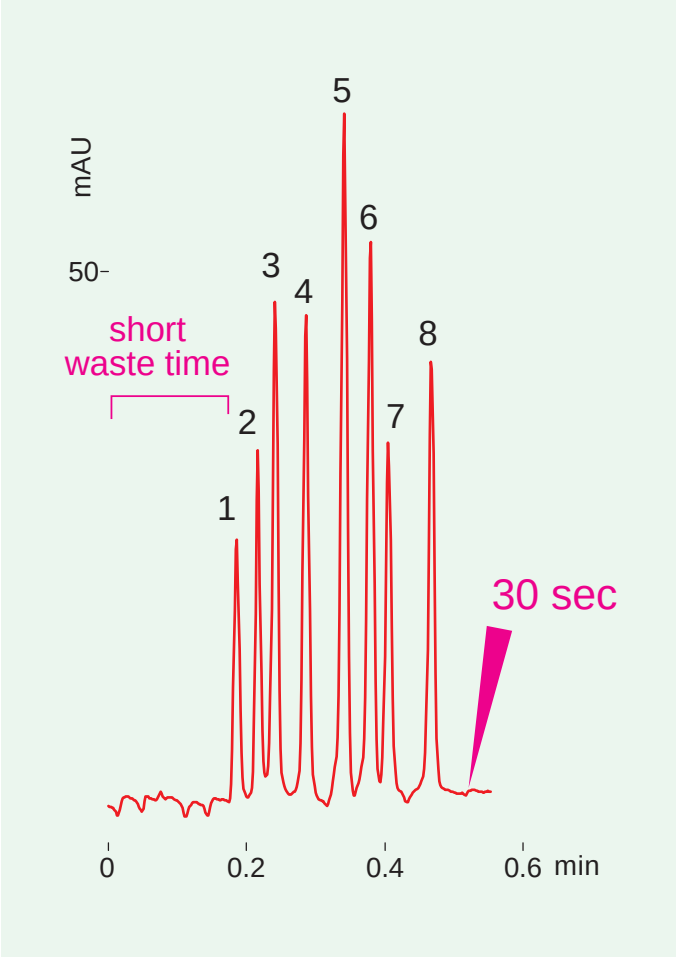
Cadenza CD-C18 20 x 2 mm Technical

Advantages of high-speed separation with a 3um particle



1. sulfadiazine
2. sulfathiazole
3. sulfamerazine
4. sulfamethazine
5. sulfamonomethoxine
6. sulfamethoxazole
7. sulfisoxazole
8. sulfaquinoxaline

Cadenza CD-C18, 20 x 2 mm
A: water /formic acid = 100 /0.1
B: acetonitrile /formic acid = 100 /0.1
4-37%B (0-0.5min)
1.5 mL/min (11 MPa)
50 degC, 280 nm
0.4uL(40-80ng)

High-speed separation has been a key new product development theme recently, especially the combination of ultra high-pressure HPLC with sub 2um particle columns. This form of high-speed analysis is based on making a sub 2um column whose column efficiency is maintained even under a high flow rate.

The synergism between the sub 2um column and high flow rate causes one major flaw: extraordinarily high pressure. For that reason, an HPLC system with high barotolerance (i.e. 100 MPa) is needed.

The above chromatogram is a high-speed analytical example of 3um particle Cadenza CD-C18. With a 20 x 2mm column size, little time is wasted before the first peak and moreover, 8 peaks of separation is achieved in 30 seconds at 11MPa in pressure. Under the same analytical conditions, a 1.7um particle, 50 x 2.1mm column requires 50 seconds at a pressure of 100 MPa.

Shrinking particle diameter is one methodology to improve resolution but decreasing column size is more effective to decrease run-time, especially for high-throughput analysis in gradient mode. 3um particle columns provide the optimal balance of column pressure and high resolution, allowing researchers to continue using the conventional HPLC instruments they use today.