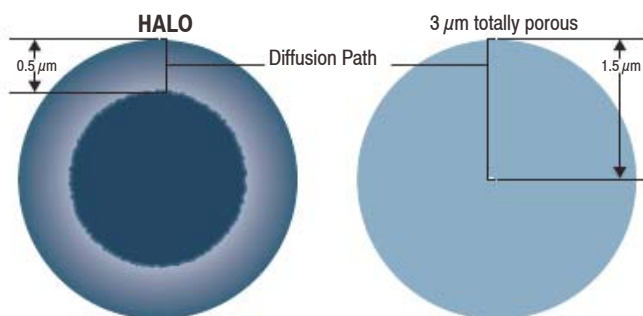


## HALO™ HPLC Columns - have the cake and eat it too

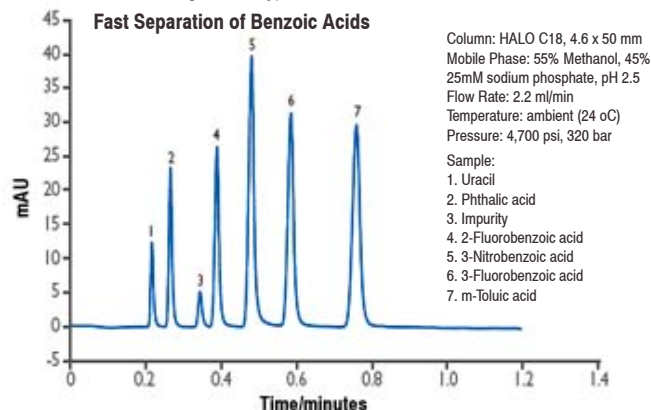
### Design

The shorter diffusion path of HALO reduces axial dispersion



The shorter diffusion path of HALO particles reduces axial dispersion of solutes and minimizes peak broadening. A Halo particle has only a 0.5 µm diffusion path compared to the approximately 1.5 µm diffusion path of a 3 µm totally porous particle. Because of the shorter diffusion path, the performance advantages of HALO become even more apparent when separating larger solute molecules and operating at faster mobile phase flow rates.

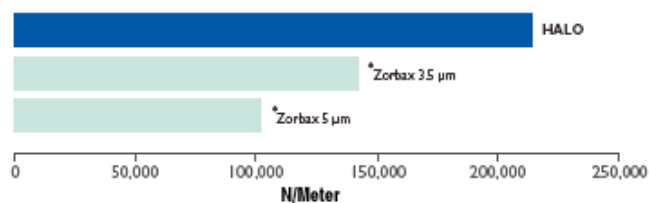
HALO columns are designed for hyper-fast HPLC



HALO columns are designed for hyper-fast separations so that higher sample throughput can be achieved. In this example, the HALO column separated seven compounds in less than 48 seconds with better than baseline resolution for all peak pairs.

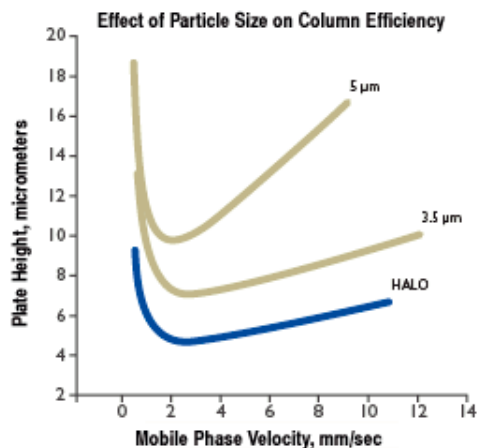
### Separation Power

HALO columns deliver more separating power



### Efficiency

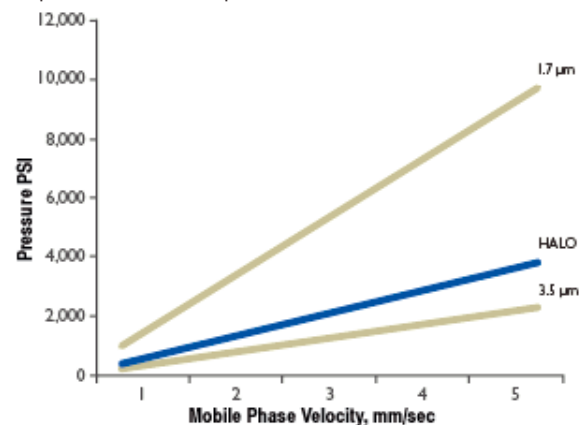
Comparison of van Deemter plots



Van Deemter plots are a convenient way to compare the efficiency of HPLC columns. In this comparison we see that HALO columns are more efficient than columns packed with 5 µm or 3.5 µm particles and that they can be run at higher mobile phase linear velocity and still maintain their resolving power.

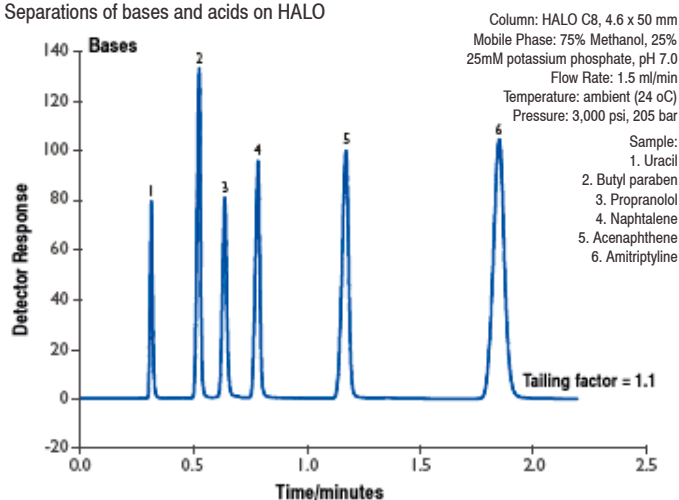
### Back Pressure

Comparison of column back pressure



Most HPLC systems have operating pressure limits of 6,000 psi (400 bar), or less. As the column packing particle size decreases, the column back pressure increases rapidly. To use columns packed with sub-2 µm size particles at their optimum flow rate, pressure that exceeds 6,000 psi is often encountered. This necessitates purchasing very expensive "ultra-pressure" equipment to achieve optimum performance. HALO columns, even though they do generate slightly higher back pressure than columns packed with 3.5 µm particles, can be used with most existing HPLC equipment.

## Separations of bases and acids on HALO



Peak tailing due to trace metals or silanol groups is essentially non-existent on HALO stationary phases. The examples here show the excellent peak shape that can be achieved for either bases or acids when using a HALO column. The conditions used for the bases were chosen to encourage any potential silanol interference. Note the excellent peak shape for amiripryline under these conditions.

**Dimensions**

2.1 x 30 mm, 2,7  $\mu$ m  
 2.1 x 50 mm, 2,7  $\mu$ m  
 2.1 x 75 mm, 2,7  $\mu$ m  
 2.1 x 100 mm, 2,7  $\mu$ m  
 2.1 x 150 mm, 2,7  $\mu$ m  
 3.0 x 30 mm, 2,7  $\mu$ m  
 3.0 x 50 mm, 2,7  $\mu$ m  
 3.0 x 75 mm, 2,7  $\mu$ m  
 3.0 x 100 mm, 2,7  $\mu$ m  
 3.0 x 150 mm, 2,7  $\mu$ m  
 4.6 x 30 mm, 2,7  $\mu$ m  
 4.6 x 50 mm, 2,7  $\mu$ m  
 4.6 x 75 mm, 2,7  $\mu$ m  
 4.6 x 100 mm, 2,7  $\mu$ m  
 4.6 x 150 mm, 2,7  $\mu$ m

**HALO C18**

8AM-92812-302 520.00  
 8AM-92812-402 700.00  
 8AM-92812-502 780.00  
 8AM-92812-602 880.00  
 8AM-92812-702 1020.00  
 8AM-92813-302 520.00  
 8AM-92813-402 700.00  
 8AM-92813-502 780.00  
 8AM-92813-602 880.00  
 8AM-92813-702 1020.00  
 8AM-92814-302 520.00  
 8AM-92814-402 700.00  
 8AM-92814-502 780.00  
 8AM-92814-602 880.00  
 8AM-92814-702 1020.00

**CHF/pc****HALO C8**

8AM-92812-308 520.00  
 8AM-92812-408 700.00  
 8AM-92812-508 780.00  
 8AM-92812-608 880.00  
 8AM-92812-708 1020.00  
 8AM-92813-308 520.00  
 8AM-92813-408 700.00  
 8AM-92813-508 780.00  
 8AM-92813-608 880.00  
 8AM-92813-708 1020.00  
 8AM-92814-308 520.00  
 8AM-92814-408 700.00  
 8AM-92814-508 780.00  
 8AM-92814-608 880.00  
 8AM-92814-708 1020.00

**CHF/pc****As Guard Column we recommend an OPTI-GUARD® 1 mm**

The OPTI-GUARD® Guard Column is in size equal to a firtight fitting and can also be installed like one without the need of tools. The floating tube stem of the OPTI-Guard® provides a zero-dead-volume connection. The integrated Guard Column has a 1 x 14 mm packed bed in the internal flow path.

**OPTI-Guard® C18; colour purple**

10-02-00007 = CHF 370.00/Pack of 5 pcs.

**OPTI-Guard® C8; colour yellow**

10-02-00010 = CHF 370.00/Pack of 5 pcs.

