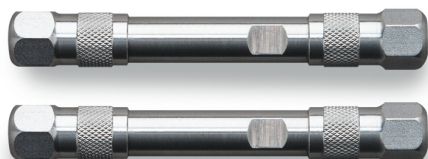


HALO™ UHPLC Columns

Bridge The Gap Between UHPLC and HPLC

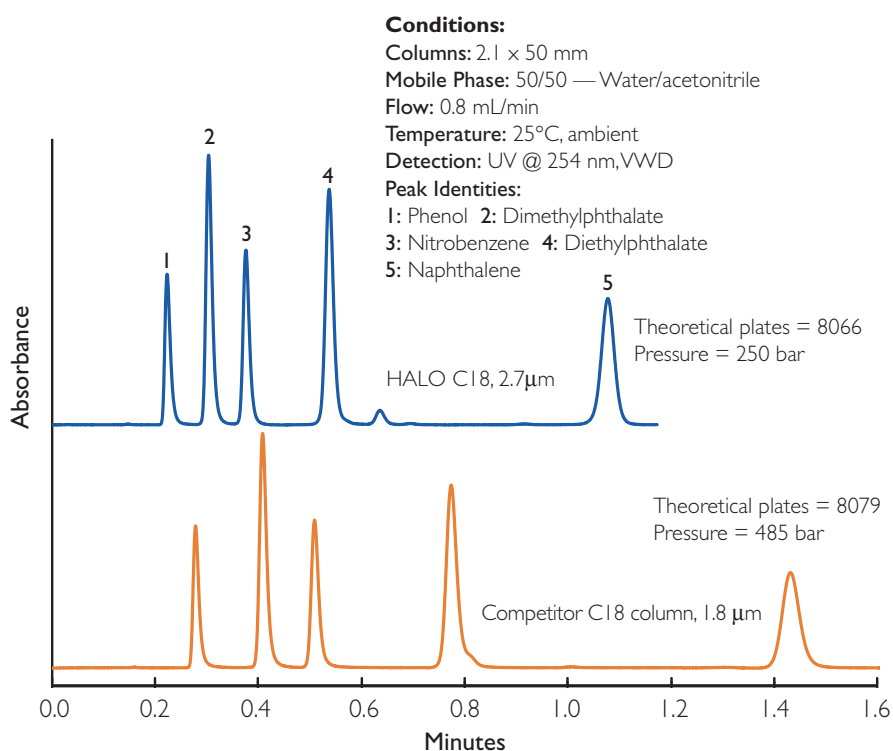
Artist rendering of a HALO Fused-Core particle — As the name implies, Fused-Core particles are manufactured by “fusing” a porous silica layer onto a solid silica particle.

HALO™ UHPLC columns. The first commercially available columns using core-shell technology for UHPLC:



- are compatible with UHPLC and conventional HPLC instrumentation and bridge the gap between UHPLC and HPLC.
- use ground-breaking Fused-Core® technology that introduced a new direction in UHPLC separations
- have over five years of proven performance
- are more rugged and reliable than other UHPLC columns
- are available in a wide variety of selectivity choices to solve most separation problems

HALO UHPLC columns require less than half the back pressure of other UHPLC columns



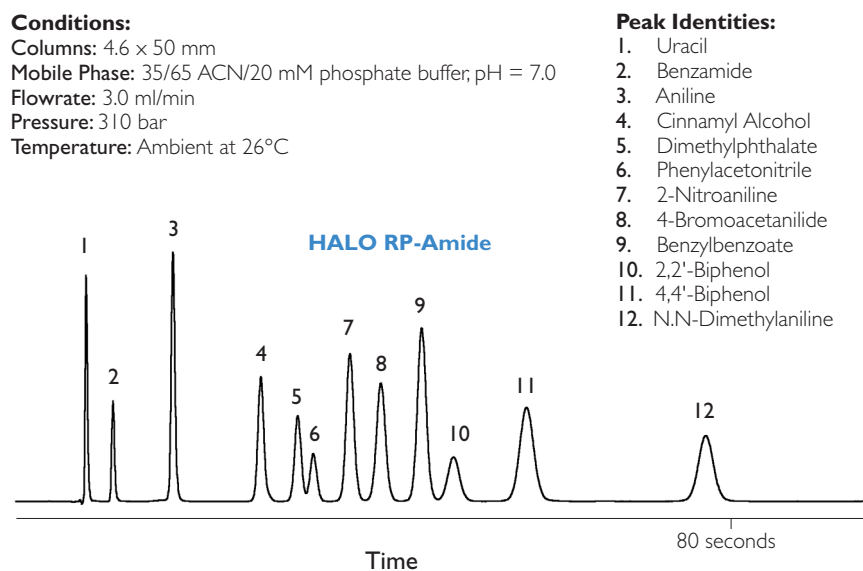
The HALO UHPLC column delivers the same resolution and speed as a UHPLC column packed with totally porous Sub-2 micron particles. However, the back pressure on the HALO column is ~ 50% lower than on the other UHPLC column.

HALO UHPLC columns.

The development of UHPLC columns together with the introduction of instruments with ultra-low dispersion and ultra-high pressures have allowed separations to be performed with either an extraordinarily high number of theoretical plates for resolving complex mixtures of solutes or for an increase in productivity via ultra-fast separations of large numbers of samples. However, growth in the use of UHPLC columns has been slowed by drawbacks in successfully applying the technology. HALO UHPLC columns, the result of ground-breaking Fused-Core particle technology, overcome many of the more serious drawbacks of UHPLC columns packed with typical totally porous particles including:

- eliminating the need to purchase expensive instrumentation
- allowing the use of larger porosity column inlet frits (2 micron versus 0.5 micron) to reduce problems of column plugging and requiring no more care in filtering mobile phases and samples than conventional HPLC columns
- operating at mobile phase pressure less than half that required for UHPLC columns packed with sub-2 micron particles, thereby avoiding frictional heating of the mobile phase that has negative effects on column efficiency and unpredictable changes in peak retention and column selectivity that are difficult to control during chromatographic runs or from lab to lab
- offering a greater number of choices of column internal diameters (ID) for use on UHPLC or HPLC instruments, including commonly used 4.6 mm ID columns

HALO UHPLC columns deliver ultra-fast high-resolution separations



The selectivity offered by the alkyl amide phase combined with the high efficiency and high speed of the HALO Fused-Core particles facilitates the separation of these 12 compounds in under 80 seconds.

Part Number Description**C18**

92812-202	2.7 µm Halo C18	2.1 x 20mm
92812-302	2.7 µm Halo C18	2.1 x 30mm
92812-402	2.7 µm Halo C18	2.1 x 50mm
92812-502	2.7 µm Halo C18	2.1 x 75mm
92812-602	2.7 µm Halo C18	2.1 x 100mm
92812-702	2.7 µm Halo C18	2.1 x 150mm
92813-202	2.7 µm Halo C18	3.0 x 20mm
92813-302	2.7 µm Halo C18	3.0 x 30mm
92813-402	2.7 µm Halo C18	3.0 x 50mm
92813-502	2.7 µm Halo C18	3.0 x 75mm
92813-602	2.7 µm Halo C18	3.0 x 100mm
92813-702	2.7 µm Halo C18	3.0 x 150mm
92814-202	2.7 µm Halo C18	4.6 x 20mm
92814-302	2.7 µm Halo C18	4.6 x 30mm
92814-402	2.7 µm Halo C18	4.6 x 50mm
92814-502	2.7 µm Halo C18	4.6 x 75mm
92814-602	2.7 µm Halo C18	4.6 x 100mm
92814-702	2.7 µm Halo C18	4.6 x 150mm

Peptide ES-C18

92122-202	2.7 µm Halo Peptide ES-C18	2.1 x 20mm
92122-302	2.7 µm Halo Peptide ES-C18	2.1 x 30mm
92122-402	2.7 µm Halo Peptide ES-C18	2.1 x 50mm
92122-502	2.7 µm Halo Peptide ES-C18	2.1 x 75mm
92122-602	2.7 µm Halo Peptide ES-C18	2.1 x 100mm
92122-702	2.7 µm Halo Peptide ES-C18	2.1 x 150mm
92123-202	2.7 µm Halo Peptide ES-C18	3.0 x 20mm
92123-302	2.7 µm Halo Peptide ES-C18	3.0 x 30mm
92123-402	2.7 µm Halo Peptide ES-C18	3.0 x 50mm
92123-502	2.7 µm Halo Peptide ES-C18	3.0 x 75mm
92123-602	2.7 µm Halo Peptide ES-C18	3.0 x 100mm
92123-702	2.7 µm Halo Peptide ES-C18	3.0 x 150mm
92124-202	2.7 µm Halo Peptide ES-C18	4.6 x 20mm
92124-302	2.7 µm Halo Peptide ES-C18	4.6 x 30mm
92124-402	2.7 µm Halo Peptide ES-C18	4.6 x 50mm
92124-502	2.7 µm Halo Peptide ES-C18	4.6 x 75mm
92124-602	2.7 µm Halo Peptide ES-C18	4.6 x 100mm
92124-702	2.7 µm Halo Peptide ES-C18	4.6 x 150mm

C8

92812-208	2.7 µm Halo C8	2.1 x 20mm
92812-308	2.7 µm Halo C8	2.1 x 30mm
92812-408	2.7 µm Halo C8	2.1 x 50mm
92812-508	2.7 µm Halo C8	2.1 x 75mm
92812-608	2.7 µm Halo C8	2.1 x 100mm
92812-708	2.7 µm Halo C8	2.1 x 150mm
92813-208	2.7 µm Halo C8	3.0 x 20mm
92813-308	2.7 µm Halo C8	3.0 x 30mm
92813-408	2.7 µm Halo C8	3.0 x 50mm
92813-508	2.7 µm Halo C8	3.0 x 75mm
92813-608	2.7 µm Halo C8	3.0 x 100mm
92813-708	2.7 µm Halo C8	3.0 x 150mm
92814-208	2.7 µm Halo C8	4.6 x 20mm
92814-308	2.7 µm Halo C8	4.6 x 30mm
92814-408	2.7 µm Halo C8	4.6 x 50mm
92814-508	2.7 µm Halo C8	4.6 x 75mm
92814-608	2.7 µm Halo C8	4.6 x 100mm
92814-708	2.7 µm Halo C8	4.6 x 150mm

PFP

92812-209	2.7 µm Halo PFP	2.1x20mm
92812-309	2.7 µm Halo PFP	2.1x30mm

Part Number Description

92812-409	2.7 µm Halo PFP	2.1x50mm
92812-509	2.7 µm Halo PFP	2.1x75mm
92812-609	2.7 µm Halo PFP	2.1x100mm
92812-709	2.7 µm Halo PFP	2.1x150mm
92813-309	2.7 µm Halo PFP	3.0x30mm
92813-409	2.7 µm Halo PFP	3.0x50mm
92813-509	2.7 µm Halo PFP	3.0x75mm
92813-609	2.7 µm Halo PFP	3.0x100mm
92813-709	2.7 µm Halo PFP	3.0x150mm
92814-309	2.7 µm Halo PFP	4.6x30mm
92814-409	2.7 µm Halo PFP	4.6x50mm
92814-509	2.7 µm Halo PFP	4.6x75mm
92814-609	2.7 µm Halo PFP	4.6x100mm
92814-709	2.7 µm Halo PFP	4.6x150mm

HILIC

92812-201	2.7 µm Halo HILIC	2.1 x 20mm
92812-301	2.7 µm Halo HILIC	2.1 x 30mm
92812-401	2.7 µm Halo HILIC	2.1 x 50mm
92812-501	2.7 µm Halo HILIC	2.1 x 75mm
92812-601	2.7 µm Halo HILIC	2.1 x 100mm
92812-701	2.7 µm Halo HILIC	2.1 x 150mm
92813-201	2.7 µm Halo HILIC	3.0 x 20mm
92813-301	2.7 µm Halo HILIC	3.0 x 30mm
92813-401	2.7 µm Halo HILIC	3.0 x 50mm
92813-501	2.7 µm Halo HILIC	3.0 x 75mm
92813-601	2.7 µm Halo HILIC	3.0 x 100mm
92813-701	2.7 µm Halo HILIC	3.0 x 150mm
92814-201	2.7 µm Halo HILIC	4.6 x 20mm
92814-301	2.7 µm Halo HILIC	4.6 x 30mm
92814-401	2.7 µm Halo HILIC	4.6 x 50mm
92814-501	2.7 µm Halo HILIC	4.6 x 75mm
92814-601	2.7 µm Halo HILIC	4.6 x 100mm
92814-701	2.7 µm Halo HILIC	4.6 x 150mm

RP-Amide

92812-207	2.7 µm Halo RP-Amide	2.1 x 20mm
92812-307	2.7 µm Halo RP-Amide	2.1 x 30mm
92812-407	2.7 µm Halo RP-Amide	2.1 x 50mm
92812-507	2.7 µm Halo RP-Amide	2.1 x 75mm
92812-607	2.7 µm Halo RP-Amide	2.1 x 100mm
92812-707	2.7 µm Halo RP-Amide	2.1 x 150mm
92813-207	2.7 µm Halo RP-Amide	3.0 x 20mm
92813-307	2.7 µm Halo RP-Amide	3.0 x 30mm
92813-407	2.7 µm Halo RP-Amide	3.0 x 50mm
92813-507	2.7 µm Halo RP-Amide	3.0 x 75mm
92813-607	2.7 µm Halo RP-Amide	3.0 x 100mm
92813-707	2.7 µm Halo RP-Amide	3.0 x 150mm
92814-207	2.7 µm Halo RP-Amide	4.6 x 20mm
92814-307	2.7 µm Halo RP-Amide	4.6 x 30mm
92814-407	2.7 µm Halo RP-Amide	4.6 x 50mm
92814-507	2.7 µm Halo RP-Amide	4.6 x 75mm
92814-607	2.7 µm Halo RP-Amide	4.6 x 100mm
92814-707	2.7 µm Halo RP-Amide	4.6 x 150mm

Phenyl-Hexyl

92812-206	2.7 µm Halo Phenyl-Hexyl	2.1 x 20mm
92812-306	2.7 µm Halo Phenyl-Hexyl	2.1 x 30mm
92812-406	2.7 µm Halo Phenyl-Hexyl	2.1 x 50mm
92812-506	2.7 µm Halo Phenyl-Hexyl	2.1 x 75mm
92812-606	2.7 µm Halo Phenyl-Hexyl	2.1 x 100mm
92812-706	2.7 µm Halo Phenyl-Hexyl	2.1 x 150mm
92813-206	2.7 µm Halo Phenyl-Hexyl	3.0 x 20mm

Part Number	Description	
92813-306	2.7 µm Halo Phenyl-Hexyl	3.0 x 30mm
92813-406	2.7 µm Halo Phenyl-Hexyl	3.0 x 50mm
92813-506	2.7 µm Halo Phenyl-Hexyl	3.0 x 75mm
92813-606	2.7 µm Halo Phenyl-Hexyl	3.0 x 100mm
92813-706	2.7 µm Halo Phenyl-Hexyl	3.0 x 150mm
92814-206	2.7 µm Halo Phenyl-Hexyl	4.6 x 20mm
92814-306	2.7 µm Halo Phenyl-Hexyl	4.6 x 30mm
92814-406	2.7 µm Halo Phenyl-Hexyl	4.6 x 50mm
92814-506	2.7 µm Halo Phenyl-Hexyl	4.6 x 75mm
92814-606	2.7 µm Halo Phenyl-Hexyl	4.6 x 100mm
92814-706	2.7 µm Halo Phenyl-Hexyl	4.6 x 150mm

Guard Columns

92812-101	2.7µm Halo HILIC	2.1mm Guard Column 3 pk.
92813-101	2.7µm Halo HILIC	3.0mm Guard Column 3 pk.
92814-101	2.7µm Halo HILIC	4.6mm Guard Column 3 pk.
92812-102	2.7µm Halo C18	2.1mm Guard Column 3 pk.
92813-102	2.7µm Halo C18	3.0mm Guard Column 3 pk.
92814-102	2.7µm Halo C18	4.6mm Guard Column 3 pk.
92812-108	2.7µm Halo C8	2.1mm Guard Column 3 pk.
92813-108	2.7µm Halo C8	3.0mm Guard Column 3 pk.
92814-108	2.7µm Halo C8	4.6mm Guard Column 3 pk.
92812-107	2.7µm Halo RP-Amide	2.1mm Guard Column 3 pk.
92813-107	2.7µm Halo RP-Amide	3.0mm Guard Column 3 pk.
92814-107	2.7µm Halo RP-Amide	4.6 mmGuard Column 3 pk.
92812-106	2.7µm Halo Phenyl-Hexyl	2.1mm Guard Column 3 pk.
92813-106	2.7µm Halo Phenyl-Hexyl	3.0mm Guard Column 3 pk.
92814-106	2.7µm Halo Phenyl-Hexyl	4.6 mmGuard Column 3 pk.
92812-109	2.7µm Halo PFP	2.1mm Guard Column 3 pk.
92813-109	2.7µm Halo PFP	3.0mm Guard Column 3 pk.
92814-109	2.7µm Halo PFP	4.6 mm Guard Column 3 pk.
92122-102	2.7µm Halo Peptide ES-C18	2.1mm Guard Column 3 pk.
92123-102	2.7µm Halo Peptide ES-C18	3.0mm Guard Column 3 pk.
92124-102	2.7µm Halo Peptide ES-C18	4.6 mm Guard Column 3 pk.

Capillary Columns

98219-402	75 µm x 50 mm	2.7 µm Halo C18
98219-408	75 µm x 50 mm	2.7 µm Halo C8
98218-402	100 µm x 50 mm	2.7 µm Halo C18
98218-408	100 µm x 50 mm	2.7 µm Halo C8
98217-402	200 µm x 50 mm	2.7 µm Halo C18
98217-408	200 µm x 50 mm	2.7 µm Halo C8
98216-402	300 µm x 50 mm	2.7 µm Halo C18
98216-408	300 µm x 50 mm	2.7 µm Halo C8
98219-702	75 µm x 150 mm	2.7 µm Halo C18
98219-708	75 µm x 150 mm	2.7 µm Halo C8
98218-702	100 µm x 150 mm	2.7 µm Halo C18
98218-708	100 µm x 150 mm	2.7 µm Halo C8
98217-702	200 µm x 150 mm	2.7 µm Halo C18
98217-708	200 µm x 150 mm	2.7 µm Halo C8
98216-702	300 µm x 150 mm	2.7 µm Halo C18
98216-708	300 µm x 150 mm	2.7 µm Halo C8

other dimensions and phases available upon request

1.0 mm ID Columns

92811-402	2.7µm Halo C18	1.0 x 50 mm
92811-602	2.7µm Halo C18	1.0 x 100 mm
92811-702	2.7µm Halo C18	1.0 x 150 mm

other dimensions and phases available upon request

HALOTM
UHPLC Columns

Contact our authorized
distributors at
[www.advanced-materials-tech.com/
purchase.html](http://www.advanced-materials-tech.com/purchase.html)