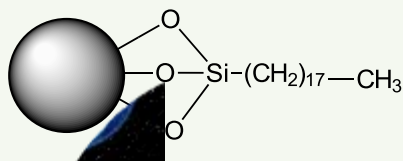


## HALO® PAH

The HALO® PAH delivers a method-specific, high efficiency separation of 18 standard PAH compounds with a resolution value of at least 1.5 in under 5 minutes for EPA 8310/610 + 2 methods!



## ADVANTAGES OF HALO® PAH

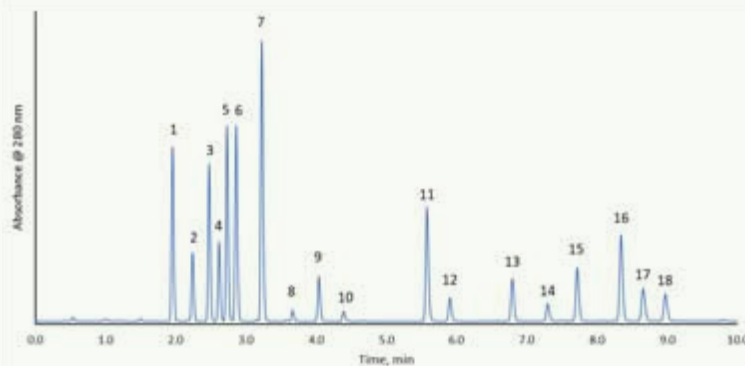
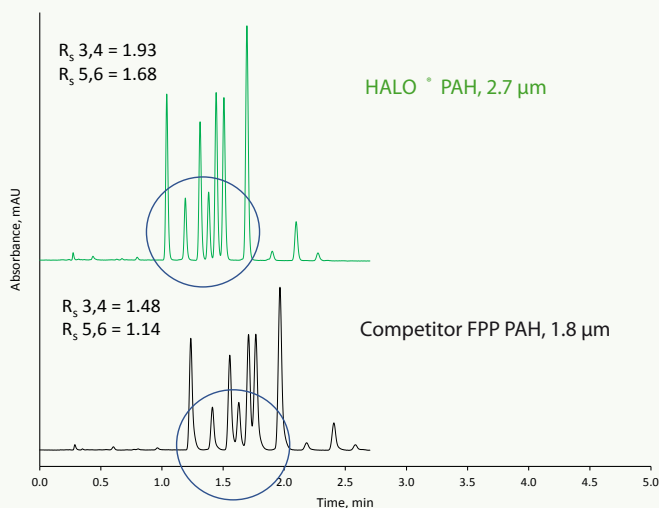
Built upon the original and proven Fused-Core® particle technology, the new HALO® PAH outperforms the leading <2 µm fully porous particle columns with less back pressure!

- Applied solution designed with environmental analysis needs in mind
- High resolution and ultra-rugged performance

Best Applications:  
EPA 610, EPA 8310, EU 15+1

HALO® PAH outperforms a fully porous particle (FPP) 1.8 µm, 95 Å column for a fast 5 min separation of method EPA 8310 + 2 demonstrating improved resolution and narrow, symmetrical peak shapes.

High resolution separation of 18 PAH compounds on HALO® PAH demonstrating resolution values of 2.44 between peaks 3 and 4 and 2.23 between peaks 5 and 6.



### PEAK IDENTITIES

- |                        |                          |                            |
|------------------------|--------------------------|----------------------------|
| 1. Naphthalene         | 8. Anthracene            | 15. Benzo[a]pyrene         |
| 2. Acenaphthylene      | 9. Fluoranthene          | 16. Dibenzo[a,h]anthracene |
| 3. 1-methylnaphthalene | 10. Pyrene               | 17. Benzo[g,h,i]perylene   |
| 4. 2-methylnaphthalene | 11. Benzo(a)anthracene   | 18. Indeno[1,2,3-cd]pyrene |
| 5. Acenaphthene        | 12. Chrysene             |                            |
| 6. Fluorene            | 13. Benzo[b]fluoranthene |                            |
| 7. Phenanthrene        | 14. Benzo[k]fluoranthene |                            |

### TEST CONDITIONS

Column : HALO 90 Å PAH, 2.7 µm  
 4.6 x 50 mm  
 Part Number: 92844-412  
 Competitor Column: FPP PAH, 1.8 µm  
 4.6 x 50 mm  
 Mobile Phase A: Water  
 B: Acetonitrile  
 Gradient: Time %B  
 0.0 50  
 4.0 100  
 5.0 100  
 5.01 50

Flow Rate: 1.8 mL/min  
 HALO® Back Pressure: 256 bar  
 Competitor Back Pressure: 344 bar  
 Temperature: 30 °C  
 Detection: 280 nm  
 Injection Volume: 2 µL  
 Sample Solvent: Methanol  
 Data Rate: 100 Hz  
 Response Time: 0.025 sec.  
 Flow Cell: 1 µL  
 LC System: Shimadzu Nexera

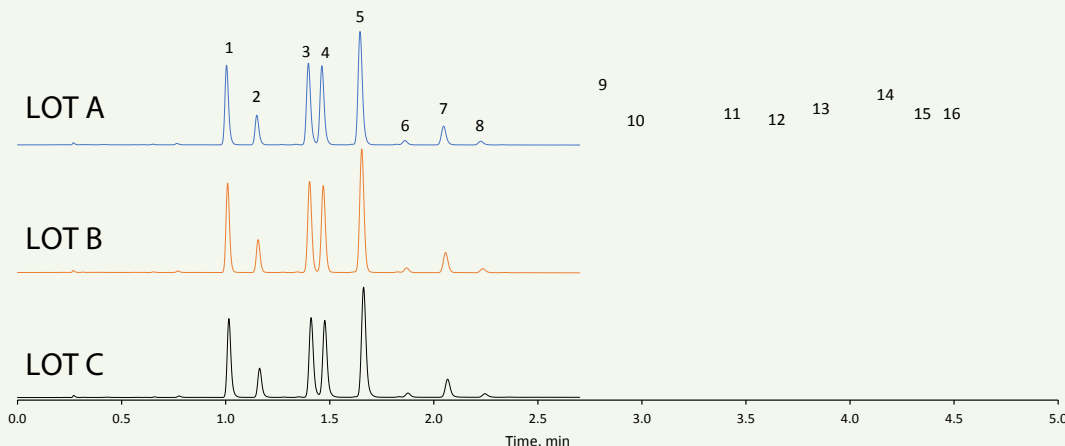
### TEST CONDITIONS

Column: HALO 90 Å PAH, 2.7 µm  
 3.0 x 100 mm  
 Part Number: 92843-612  
 Mobile Phase A: Water  
 B: Acetonitrile  
 Gradient: Time %B  
 0.0 50  
 8.0 100  
 10.0 100

Flow Rate: 0.77 mL/min  
 Back Pressure: 263 bar  
 Temperature: 30 °C  
 Detection: 280 nm  
 Injection Volume: 2 µL  
 Sample Solvent: Methanol  
 Data Rate: 100 Hz  
 Response Time: 0.025 sec.  
 Flow Cell: 1 µL  
 LC System: Shimadzu Nexera X2

# PERFORMANCE YOU CAN RELY ON

Comparison of three different HALO<sup>®</sup> PAH lots which show excellent reproducibility for 16 PAH compounds found in EPA 610 and 8310.



## TEST CONDITIONS

Column: HALO 90 Å PAH, 2.7 µm 4.6 x 50 mm  
 Part Number: 92844-412  
 Mobile Phase A: Water  
 B: Acetonitrile  
 Gradient: Time %B  
 0.0 50  
 4.0 100  
 5.0 100  
 5.01 50  
 Flow Rate: 1.8 mL/min  
 Pressure: 256 bar  
 Temperature: 30 °C  
 Detection: 280 nm  
 Injection Volume: 2 µL  
 Sample Solvent: Methanol  
 Data Rate: 100 Hz  
 Response Time: 0.025 sec.  
 Flow Cell: 1 µL  
 LC System: Shimadzu Nexera

## PEAK IDENTITIES

- |                   |                 |                          |                            |
|-------------------|-----------------|--------------------------|----------------------------|
| 1. Naphthalene    | 5. Phenanthrene | 9. Benzo[a]anthracene    | 13. Benzo[a]pyrene         |
| 2. Acenaphthylene | 6. Anthracene   | 10. Chrysene             | 14. Dibenzo[a,h]anthracene |
| 3. Acenaphthene   | 7. Fluoranthene | 11. Benzo[b]fluoranthene | 15. Benzo[g,h,i]perylene   |
| 4. Fluorene       | 8. Pyrene       | 12. Benzo[k]fluoranthene | 16. Indeno[1,2,3-cd]pyrene |

# HALO<sup>®</sup> PAH

Ligand: Trifunctional C18  
 Particle Size: 2.7 µm  
 Pore Size: 90 Å

Surface Area: 135 m<sup>2</sup>/g  
 Carbon Load: 9.9 %

Endcapped: No  
 Low pH Limit /Max T: 2/60 °C  
 High pH Limit/Max T: 9/40 °C

## ORDERING INFORMATION

### ANALYTICAL COLUMNS

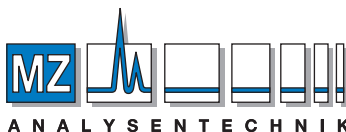
90 Å, 2.7 µm

Dimensions: ID x Length (in mm)	PN
2.1 x 50	92842-412
2.1 x 100	92842-612
2.1 x 150	92842-712
3.0 x 50	92843-412
3.0 x 100	92843-612
3.0 x 150	92843-712
4.6 x 50	92844-412
4.6 x 100	92844-612
4.6 x 150	92844-712

### GUARD COLUMNS

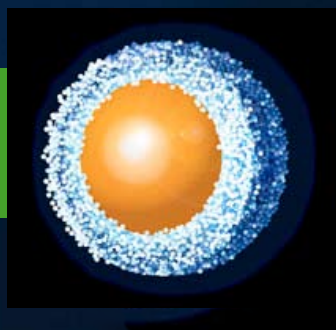
2.7, µm, 90 Å Guard columns, 3-pack

Dimensions: ID x Length (in mm)	PN
2.1 x 5	92842-112
3.0 x 5	92843-112
4.6 x 5	92844-112
Guard Column Holder	94900-001



### AUTHORIZED DISTRIBUTOR

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