

# HALO® UHPLC Guard Columns

ADD EVEN MORE DURABILITY TO YOUR HALO UHPLC COLUMNS

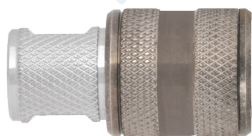
- Ultra-low dispersy for UHPLC columns
- Effectively filters-out particulate material and prevents column inlet frit plugging
- Collects non-eluting compounds from the sample and prevents column fouling
- Finger-tight guard replacement design
- Easily replace guard cartridge without removing guard holder from the flow path
- Auto-adjusting ZDV fitting ensures optimum connection to the HALO analytical column. Simple adjustment to fit any UHPLC column

HALO® UHPLC guard columns are finger-tight, direct-connect units that represent the latest in fittings and column protection technology. They are easy to use, maintain ultra-low peak dispersion and are safe to operate at pressure up to 600 bar. They were developed to provide convenient, cost-effective protection for HALO UHPLC analytical columns, but can be used just as effectively with any other UHPLC columns. The ZDV exit end fitting has a unique spring-loaded mechanism that auto-adjusts to any column with a 10–32 column inlet port and ensures an optimum connection to the analytical column every time. All HALO packing materials are available in these HALO guard cartridges (*see Ordering Information*).

HALO UHPLC cartridge guard columns provide both physical (filtration) and chemical protection for costly UHPLC columns without compromising the ultra high performance of modern UHPLC columns, such as HALO Fused-Core® columns or other UHPLC columns. For added convenience in use, the guard cartridges are easily replaced without having to remove the guard column holder from the flow path.

#### Finger-tight guard cartridge holder, Inlet

Provides easy replacement of guard cartridge



#### Finger-tight guard cartridge holder, Outlet

Allows for replacement of guard cartridge without removing the guard holder from the flow path



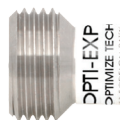
#### Titanium hybrid ferrule

Adds durability for multiple connections



#### HALO guard cartridge

All HALO phases available

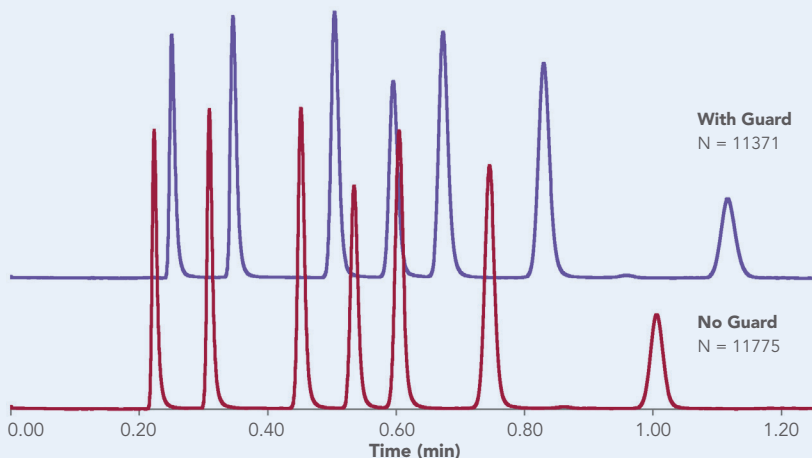


#### Auto-adjusting zero dead volume (ZDV) end fitting

Ensures optimum, ZDV connection to the analytical column.

HALO guard columns provide optimum protection for your HALO UHPLC column without sacrificing column efficiency.

<b>Column:</b>	4.6 x 50 mm C18	<b>Sample:</b>	uracil	<b>Pressure:</b>	158 bar with guard column
<b>Mobile Phase:</b>	60/40 ACN/water		phenol		146 bar without guard column
<b>Flow Rate:</b>	1.8 mL/min		nitrobenzene	<b>Instrument:</b>	Agilent 1100
<b>Temperature:</b>	30 °C		anisole		
<b>Detection:</b>	254 nm		1-chloro-nitrobenzene		
<b>Injection Volume:</b>	1 µL		benzophenone		
			naphthalene		



A HALO guard column installed on a HALO C18, 4.6 x 50 mm UHPLC column causes less than a 4% loss in efficiency compared to a HALO UHPLC column with no guard column installed. Since resolution changes with the square root of the change in efficiency, the HALO guard column affects the resolution between peaks by less than 2%.

## Ordering Information

HALO UHPLC cartridge guard columns are sold in 3-packs in different chemistries and dimensions. Use the following table to order the cartridges you desire. All cartridges must be used with a cartridge holder (Part Number 94900-001).

### HALO® Fused-Core® Guard Columns

Dimension	C18	C8	RP-Amide	Phenyl-Hexyl	Peptide ES-C18	HILIC
2.1 x 5 mm	92812-102	92812-108	92812-107	92812-106	92122-102	92812-101
3.0 x 5 mm	92813-102	92813-108	92813-107	92813-106	92123-102	92813-101
4.6 x 5 mm	92814-102	92814-108	92814-107	92814-106	92124-102	92814-101

Guard Cartridges, 3 per pack

Guard Cartridge Holder: 94900-001



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