

Column Protection Suggestion for a 1 mm Cogent 2.o Column - Tech Information

Date: 11-APRIL-2018 Last Updated: 11-FEBRUARY-2026

Which Guard Column Should You Use with a 1 mm Cogent 2.o Column?

Users of 1 mm internal-diameter Cogent 2.o™ columns—which feature 2.2 µm near-UHPLC silica hydride particles—often look for a matching guard column to protect their analytical investment.

However, no guard column exists with the exact same internal dimensions required for proper flow and performance. Because of this, a guard column is *not* recommended for these ultrahigh-efficiency narrow-bore columns.

Why No Guard Column Is Offered for the 1 mm Cogent 2.o Format

Guard columns must match the analytical column's:

- Internal diameter (ID)
- Particle size
- Packing characteristics
- Flow profile

For the 1 mm ID / 2.2 µm geometry, no guard can maintain identical backpressure and flow distribution. Any mismatch would compromise:

- Peak shape
- Reproducibility
- Efficiency
- Sensitivity (especially in LC–MS)

Thus, no guard should be used with this specific column format.

Recommended Alternative: Cogent Column Filters

Instead of a guard, we recommend protecting 1 mm columns using Cogent Column Filters, which are:

- Disposable
- Inline
- Non-retentive (they do *not* change chromatography)
- Designed solely for particulate protection

These filters safeguard the column from:

- Undissolved sample particulates
- Mobile-phase debris

- Particles from pump seal wear
- Accidental contamination during routine operation

Recommended Part Number

For 1 mm ID columns with 2.2 μm particles, we recommend: Cogent Column Filter – Item No. 49650-005

This filter setup effectively replaces the need for a guard column without disrupting performance.

Why Filters Work Better Than Guards for Ultra-Narrow Columns

1. Prevent Backpressure Issues

Guard columns add extra length, extra packing, and extra restriction—often more than a 1 mm ID system can tolerate while maintaining method integrity.

2. Protect Without Affecting Chromatography

Filters do not retain analytes; they simply trap particulates upstream. we emphasize that chromatography remains unchanged, making them a safer alternative.

3. Lower Cost, Higher Reliability

Filters are disposable and inexpensive compared to guard cartridges. More importantly, they prevent irreversible damage to the narrow inlet frits of 1 mm columns, which are extremely sensitive to clogging.

For the 1mm ID column with 2 μm particle size we recommend item number 49650-005
Click [HERE](#) for ordering information and a picture of the filter.



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