

## Column Filter Compatibility Guide - Tech Information

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### Overview

The Cogent Disposable Column Filter is engineered to protect HPLC columns by trapping particulates before they reach and potentially clog the column frits. Each filter integrates a stainless-steel (SS) frit inside a durable PEEK housing, ensuring mechanical stability, chemical resistance, and ease of replacement.

When system backpressure begins to rise, the filter can be quickly removed and replaced to maintain optimal column performance without interrupting analytical workflows.

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### Compatibility Overview

Cogent Disposable Column Filters are suitable for use with most 2.1 mm, 3.0 mm, 4.0 mm, and 4.6 mm ID HPLC columns.

However, the internal flow path is optimized specifically for 4.6 mm ID columns. While the filter can be used with 2.1 mm ID columns, analysts should be aware that the larger internal diameter may introduce additional dead volume, which can produce band broadening—especially when paired with highly efficient, narrow-bore tubing.

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### Practical Considerations

Most routine HPLC setups use standard 0.005" ID tubing, even when switching between 4.6 mm and 2.1 mm ID columns. In these common configurations, the Cogent Column Filter typically performs reliably without significant chromatographic distortion.

For LC-MS systems, compatibility considerations depend on the system architecture:

- HPLC + MS hybrid setups: These generally use 0.005" ID tubing and are typically compatible with the filter.
  - Dedicated LC-MS instruments: These systems may use smaller ID tubing optimized for ultra-low dispersion. In such cases, the wider internal flow path of the filter may not be ideal and could negatively impact peak shape.
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### Material Compatibility

The filter element is fabricated from HPLC-grade stainless steel, which provides robust performance for most analytical applications. However, stainless steel may introduce adsorption effects or peak distortion with certain analytes, including:

- Nucleotides
- Proteins

- Metal-sensitive compounds

For biological, metal-sensitive, or highly adsorptive analytes, a titanium inline filter is recommended. Titanium offers improved corrosion resistance and enhanced biocompatibility, minimizing the risk of sample interaction.

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### **Additional Compatibility Note**

Cogent Column Filters are not compatible with Waters®-type fittings used on Waters HPLC columns. Users operating Waters systems should verify fitting requirements before selecting inline filtration hardware.

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### **Ordering Information**

Click [HERE](#) for ordering information and product images of the Cogent brand Column Filters.



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