

## Sterilize Your Sample Using a Syringe Filter - HPLC Primer

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### Overview

A 0.2  $\mu\text{m}$  syringe filter is commonly used in HPLC workflows to remove particulate matter that can damage UHPLC and HPLC columns.

While these filters can also remove microorganisms such as bacteria—and in some cases, larger viruses and spores—it is important to understand that this process does **not** produce a fully sterile final solution unless the filtration device itself is sterile.

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### What a 0.2 $\mu\text{m}$ Filter Removes

A 0.2  $\mu\text{m}$  membrane will effectively remove:

- Particles larger than 0.2  $\mu\text{m}$
- Most bacteria
- Some viruses and spores (depending on size and structure)

This level of filtration is extremely beneficial for UHPLC methods, where inlet frits have very small pores that can easily clog if particulates or microorganisms pass through.

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### Why the Final Solution Is Not Considered Sterile

Even when a 0.2  $\mu\text{m}$  membrane removes microorganisms, the resulting solution is **not truly sterile** unless:

- The syringe filter is certified sterile
- The device has been sterilized prior to use
- Sterile technique is maintained throughout sample handling

Once the sample exits the membrane and enters the outlet side of a non-sterile filter housing, sterility is no longer assured. This distinction is critical for biological, microbiological, or sterile-processing workflows but less important for typical analytical HPLC procedures.

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### Benefits for HPLC and UHPLC

Using a 0.2  $\mu\text{m}$  filter is highly recommended for:

- Protecting UHPLC columns, which use extremely fine porous frits
- Preventing particulate-induced backpressure increases
- Improving consistency and reproducibility in chromatographic performance
- Minimizing downtime and column replacement costs

This step ensures that larger particles—including shed pump-seal debris and microbial contaminants—do not accumulate at the column inlet.

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**Ordering Information:** Click [HERE](#) for ordering information and pictures of AQ™ brand syringe filters.

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