

What is a Steady State for Surfaces like Syringe Filters - FAQ

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When using syringe filters in HPLC workflows, it's important to understand how the filter membrane interacts with your sample—especially during the first few milliliters of filtration.

What Happens at the Filter Surface?

Filter membranes may contain:

- **Charged sites** that can temporarily adsorb analytes
- **Trace extractables**, which are small amounts of residual compounds from the manufacturing process

At MICROSOLV, our AQ™ Syringe Filters are engineered to have minimal extractables, but even the best filters may release trace amounts—especially if your solvent dissolves them. These extractables typically appear only in the first few milliliters of filtrate, which should be discarded to avoid interference in your analysis.

What Is “Steady State”?

If your analyte interacts with charged sites on the membrane, some adsorption may occur initially. However, once these sites are saturated—usually within the first few milliliters—no further adsorption occurs, and the analyte concentration in the filtrate becomes stable and reproducible.

This point is referred to as the “steady state”—a condition where the filter no longer alters the sample composition.

Best Practices

- Discard the first few milliliters of filtrate to eliminate extractables and reach steady state.
 - Check your lab's SOPs to confirm whether discarding filtrate is acceptable, as practices may vary.
 - Always use filters that are chemically compatible with your solvents and analytes.
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1.  Click [HERE](#) for AQ™ Syringe Filter ordering information and pictures
2.  Attachment: [Download](#) the MICROSOLV Filter Equivalency Study (PDF)

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