

Acrodisc MS Syringe Filters

The first LC-MS certified filter with extremely low levels of extractables

In analytical sample preparation, extraction and leaching of chemical compounds from filters are major concerns, particularly when using liquid chromatography-mass spectrometry (LC-MS) for analysis.

The emerging trend in LC-MS enables analysis at low levels while the demand to reduce external contaminations, such as those coming from the filter, becomes more apparent. It is obvious that an underlying issue, when filtration is used for sample preparation, is the need to reduce the amount of extractables and leachables in the filter effluents that may ultimately jeopardize analytical results and data interpretation.

Acrodisc® MS Syringe Filters were designed specifically to extend the lifespan of LC columns used for LC-MS analyses without adding significant extractables and with minimal analyte adsorption. These filters are constructed with a water-wettable polytetrafluoroethylene (wwPTFE) membrane in high density polyethylene (HDPE) housings. The efficiency of the filters at removing particulates was examined using 0.05% polymer microsphere suspensions with an average diameter of 0.31 µm.

APPLICATIONS

The Acrodisc MS syringe filter was developed specifically for LC-MS sample preparation applications, such as:

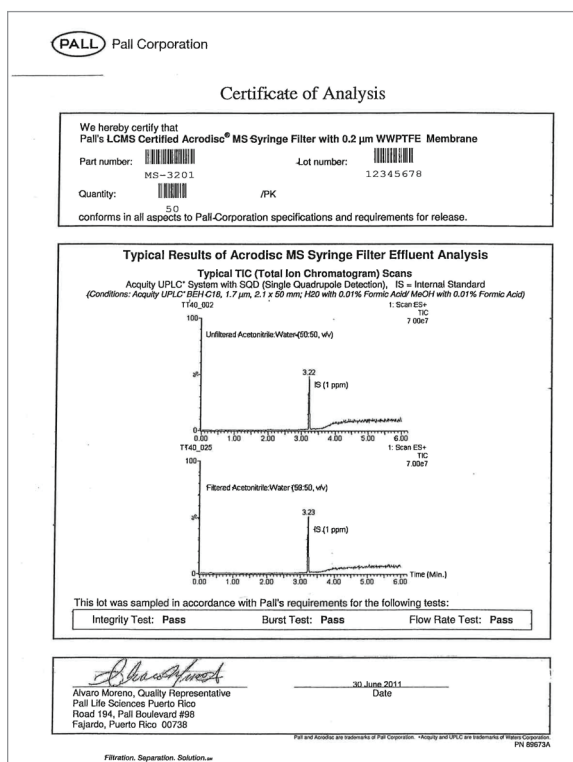
- Molecular identification
- Structural determination
- Pharmacokinetics
- Drug discovery and development
- Drug testing
- Environmental monitoring
- Food safety monitoring
- Oil composition determination



- **LC-MS (liquid chromatography mass spectrometry) certified** – Minimize interference in your LC-MS results with the Acrodisc MS syringe filter. The first LC-MS certified filter with extremely low levels of extractables.
- **Low ion suppression/enhancement** – Reduce the need for retesting. The Acrodisc MS syringe filters will not contribute extractables that will interfere with the ionization process, which is the heart of the LC-MS technique.
- **Protective packaging design** – Save money and prevent downtime due to accidental contamination. Acrodisc MS syringe filters are packaged into five separate tubes for protection from external sources of extractables. While one tube is in use, the others are kept sealed.
- **Excellent chemical resistance** – Use this universal filter for all your LC-MS samples. The wwPTFE (water wettable polytetrafluoroethylene) membrane can be used with both organic and aqueous solvents. When coupled with a polyethylene housing, the membrane offers excellent chemical resistance.
- **Low protein binding** – Get accurate and confident quantitative results. There is minimal protein adsorption with the Acrodisc MS syringe filters.
- **Particulate retention** – Using Acrodisc MS syringe filters will protect your columns and instrument from particulate buildup, making your columns last longer and your LC-MS perform more consistently.

CERTIFICATION

To ensure low levels of extractables, Pall certifies that all lots of WWPTFE membrane used in the Acrodisc MS syringe filters are tested according to established LC-MS techniques. Each product box includes a certificate containing Total Ion Current (TIC) chromatograms that show all detected peaks relative to an internal standard. Results for integrity, burst, and flow rate tests are also included on the certificate.



Certificate of Analysis.

LOW ION SUPPRESSION/ENHANCEMENT

Undesirable extractables can interfere with the ionization of target analytes, and lead to either ion enhancement or ion suppression. In the case of ion enhancement, a higher signal is detected and may lead to false-positive results. With ion suppression, extractables inhibit the ionization of target analytes and cause reduced MS detection efficiency. Both phenomena affect qualitative and quantitative analyses. The Acrodisc MS syringe filter minimizes the risk of ion suppression/enhancement resulting in more reliable and accurate results.

PACKAGING

The Acrodisc MS syringe filters are packaged in five special low extractable tubes that contain 10 filters each. The tubes do not contribute extractables and prevent contamination of the filters from external sources. Each tube is sealed with a cap to protect the filters until they are ready for use.



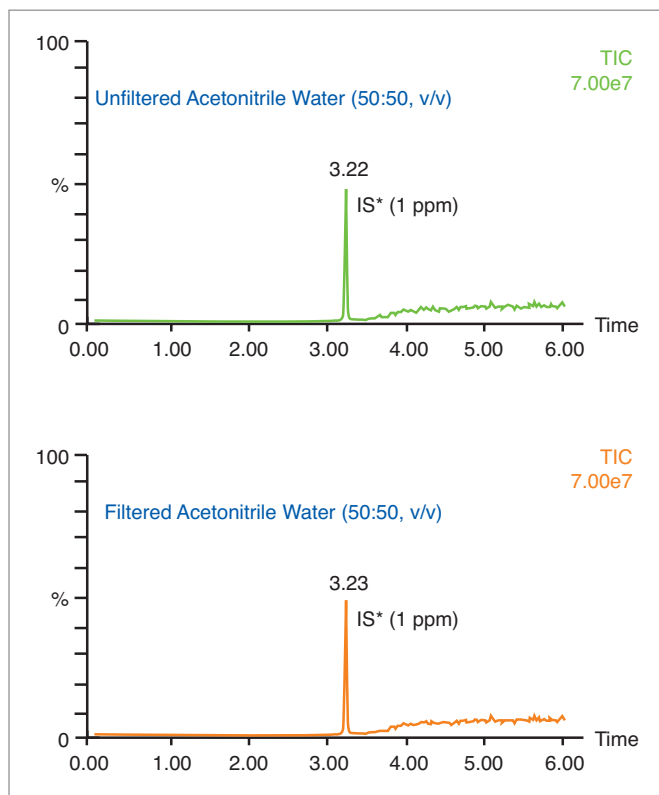
Acrodisc MS Syringe Filters.

Specifications

Materials of construction:	Filter Media: WWPTFE (water-wettable polytetrafluoroethylene) membrane
	Housing: HDPE (high density polyethylene)
Pore size:	0.2 µm
Effective filtration area:	3.9 cm ²
Typical sample volume:	<150 mL
Inlet/outlet connections:	Female threaded luer inlet, male slip luer outlet
Maximum operating pressure/temp.:	60 psi at 21–24 °C (70–75 °F)
	30 psi at 55 °C (131 °F)
Typical water flow rate:	140 mL/min at 30 psi

PERFORMANCE

The following TIC chromatograms demonstrate full scans of unfiltered and filtered solutions of 50:50, v/v, acetonitrile:water over a six-minute gradient UHPLC method.



Full scans for unfiltered and filtered solutions.

Detection - Mass Spectrometer: ES+ mode; Mass range: 100.00-1400.00; Column: ACQUITY™ UPLC™ BEH, 1.7 µm, 2.1 x 50 mm; Mobile phase A: methanol with 0.1% formic acid; Mobile phase B: water with 0.01% formic acid; Acquisition program: gradient – 6.0 min.

*IS = internal standard.

Ordering Information

Description	Part Number
wwPTFE Acrodisc MS 0.2 µm 25 mm Acrodisc 50/pk	186009244
wwPTFE Acrodisc MS 0.2 µm 13 mm Acrodisc 60/pk	186009243

COMPLEMENTARY PRODUCTS

- **Acrodisc Syringe Filters for HPLC and UHPLC Sample Prep** – Significantly increases column life and improves chromatography.
- **HPLC Mobile Phase Filtration Membranes** – Designed specifically for the stringent requirements of mobile phase filtration. Available in polypropylene, PVDF, PTFE, and nylon.

[waters.com/Filters](https://www.waters.com/Filters)

Waters

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