

FILTRATION

Keeping particulates out of the flow path prevents premature wear on vital components, drastically reducing the need for costly replacements or repairs. A holistic approach to filtration addresses potential particulates throughout the solvent flow path and leads to consistent and efficient chromatography. Generally, there are three critical areas where filtration is necessary.

Solvent Reservoir

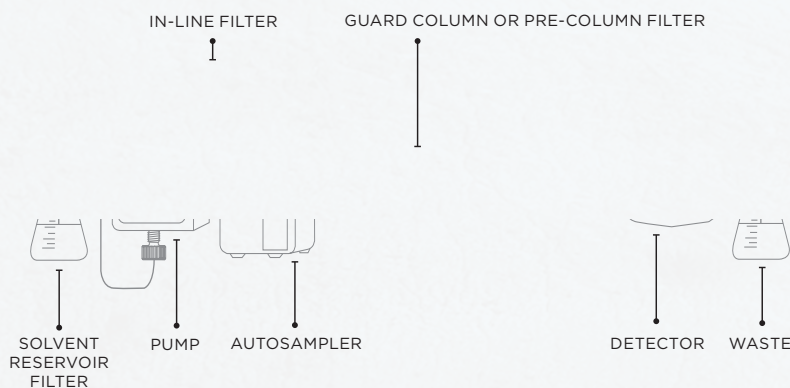
While the availability of HPLC-grade solvents diminishes the need for pre-filtering, it is imperative that a filtration device be installed in the reservoir. Placing a filter in the reservoir is an economical way to filter particles that may result from buffer salt precipitation, airborne dust, improperly cleaned glassware, or microbial contamination; none of which are remedied by the use of HPLC-grade solvents.

In-line

The frictional forces generated at the piston/seal interface inevitably lead to particulate shedding. Placement of a filtering element between the pump and injector/autosampler removes the particulates, preventing problems with downstream components and costly downtime.

Pre-Column / Direct Connect

Many things contribute to particulates in the post-injector region: incompatibilities between sample matrix and mobile phase, septa coring from the sample needle and shedding from moving parts in the injector, etc. Use of a low-impact, pre-column filter removes these particulates from the flow path, saving your analytical column and detector from deleterious effects.





**CHROMATOGRAPHIC
SPECIALTIES INC.**

1-800-267-8103 • www.chromspec.com • tech@chromspec.com





GUIDE TO OPTIMIZE FILTERS

	OPTI-SOLV [®]	OPTI-SOLV [®]	OPTI-SOLV [®]	OPTI-SOLV [®]	OPTI-SOLV [®]	OPTI-LYNX™2	EXP [®] 2	EXP [®] 2
	Solvent Reservoir Filters	In-Line Filters	Mini Filter	Micro Filter	Nano Filter	Filter	Stem Filter	Pre-Column & In-Line Filter
Maximum Pressure	 HIGH PRESSURE N/A	 HIGH PRESSURE 6K PSI / 400 BAR	 HIGH PRESSURE 6K PSI / 400 BAR	 HIGH PRESSURE 6K PSI / 400 BAR	 HIGH PRESSURE 6K PSI / 400 BAR	 ULTRA HIGH PRESSURE 6K PSI / 400 BAR	 ULTRA HIGH PRESSURE 20K+ PSI / 1400+ BAR	20K+ PSI / 1400+ BAR
Porosities Available	2µm 10µm	.2µm .5µm 2µm	.5µm 2µm 5µm	.5µm 1µm 2µm 10µm	.5µm	*	.2µm .5µm	.2µm .5µm 2µm
Depth Filter			✓			✓		✓
Swept (Internal) Volume	N/A	<6µL	1.4µL	<200nL	50nL	1.4µL	.27µL	1.4µL
Configurations	Solvent Reservoir	In-Line	Direct-Connect / Pre-Column	Direct-Connect / Pre-Column	Direct-Connect / Pre-Column	In-Line & Pre-Column	Direct-Connect / Pre-Column	In-Line & Pre-Column
Auto Adjusting (ZDV) Port Connection	N/A	N/A	✓ Floating	✓ Floating	✓ Floating	✓ Spring-loaded	✓ Floating	✓ Spring-loaded
Holder or All-In-One (AIO) Disposable	AIO	Holder	AIO	AIO	AIO	Holder	Holder	Holder
Holder Fittings Included		✓				✓	✓	✓
Hand-Tight Holder & Cartridge Change	✓	✓	✓	✓	✓	✓	✓	✓

* Please contact Optimize for pressure rating and further product details.

OPTI-SOLV® SOLVENT RESERVOIR FILTERS

OPTI-SOLV Reservoir Filters have a unique conical design inside the filter housing to prevent air bubbles from getting trapped and disturbing your analysis.

A solid PTFE body keeps the OPTI-SOLV Reservoir Filter in the base of the bottle where a bottom-mounted titanium frit provides unrestricted solvent access. The Optimize design makes installation as simple as possible – no tools or fittings required.



Biocompatible OPTI-SOLV® Analytical Reservoir Filters

SINGLES

5 PACK

10-04-00079	10-04-00080	2µm	1/16" OD Tubing
10-04-00081	10-04-00082	10µm	

SINGLES

5 PACK

10-04-00047	10-04-00050	2µm	1/8" OD Tubing
10-04-00051	10-04-00053	10µm	

Reservoir Filters with Tube Stem

SINGLES

5 PACK

10-04-00071	10-04-00072	2µm	1/16" ID Tubing
10-04-00073	10-04-00074	10µm	

SINGLES

5 PACK

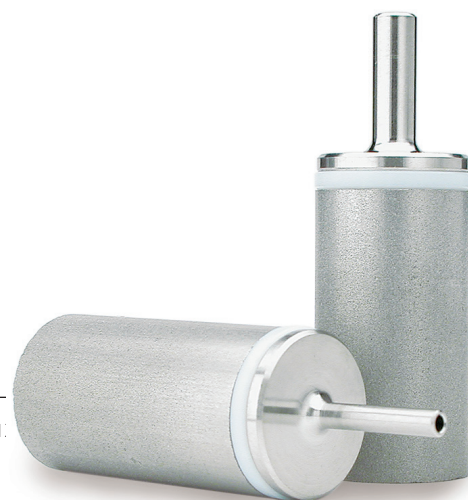
10-04-00115	10-04-00119	2µm	1/8" ID Tubing
10-04-00111	10-04-00114	10µm	

Reservoir Filter with Tube Stem

4 PACK

10-04-03151	10µm	1/8" ID Tubing	OEM# WAT025531
-------------	------	----------------	----------------

Reservoir Filters with tube stems are made with Hastelloy C® for maximum corrosion resistance and inertness.



OPTI-SOLV® IN-LINE FILTERS



Installed between the pump and injector/autosampler, the OPTI-SOLV In-Line Filter prevents damage to downstream components avoiding both instrument downtime and labor.

Simply hand-tighten the PEEK holder to make a high-pressure seal. For those who prefer wrenches, a wrench-tight stainless steel version is available. The user-friendly designs are well suited for a number of applications such as high temperature environments where quick changes are imperative.



PEEK "GORILLA
GRIP" HAND-TIGHT
HOLDER



STAINLESS STEEL (SS)
WRENCH-TIGHT
HOLDER



FILTER
ELEMENT

OPTI-SOLV® In-Line Filter Kits

Kits below include holder, fittings and 2 filter elements

10-04-02372	0.2µm, In-Line PEEK Hand-Tight Holder
10-04-02371	0.2µm, In-Line (SS) Wrench-Tight Holder
10-04-00386	0.5µm, In-Line PEEK Hand-Tight Holder
10-04-00383	0.5µm, In-Line (SS) Wrench-Tight Holder
10-04-00391	2µm, In-Line PEEK Hand-Tight Holder
10-04-00390	2µm, In-Line (SS) Wrench-Tight Holder

OPTI-SOLV® In-Line Filter Holders

10-04-03685	In-Line PEEK Hand-Tight Holder
10-04-03686	In-Line (SS) Wrench-Tight Holder

OPTI-SOLV® Filter Elements (Frits)

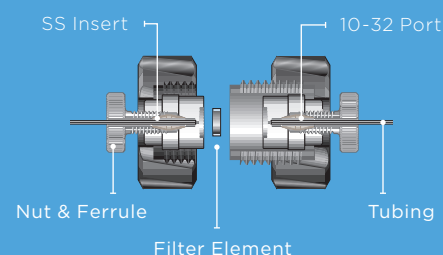
10-04-02370	0.2µm, 0.187" Dia. Filter, 10/Pk
10-04-03699	0.5µm, 0.062" Dia. Filter, 10/Pk
10-04-03701	0.5µm, 0.125" Dia. Filter, 10/Pk
10-04-00100	0.5µm, 0.187" Dia. Filter, 10/Pk
10-04-03700	2µm, 0.062" Dia. Filter, 10/Pk

10-04-03702	2µm, 0.125" Dia. Filter, 10/Pk
10-04-00103	2µm, 0.187" Dia. Filter, 10/Pk

"We have been using OPTI-SOLV In-Line Filters for several years in our high-throughput LC/MS Analysis of ADME screening samples."

Partner: Pfizer ADME
Technology Group

Two-Piece PEEK or Stainless Steel Holders



The OPTI-SOLV's unique swivel design allows frits to be changed without removing the connecting tubing. Just plumb the holder once and leave it.

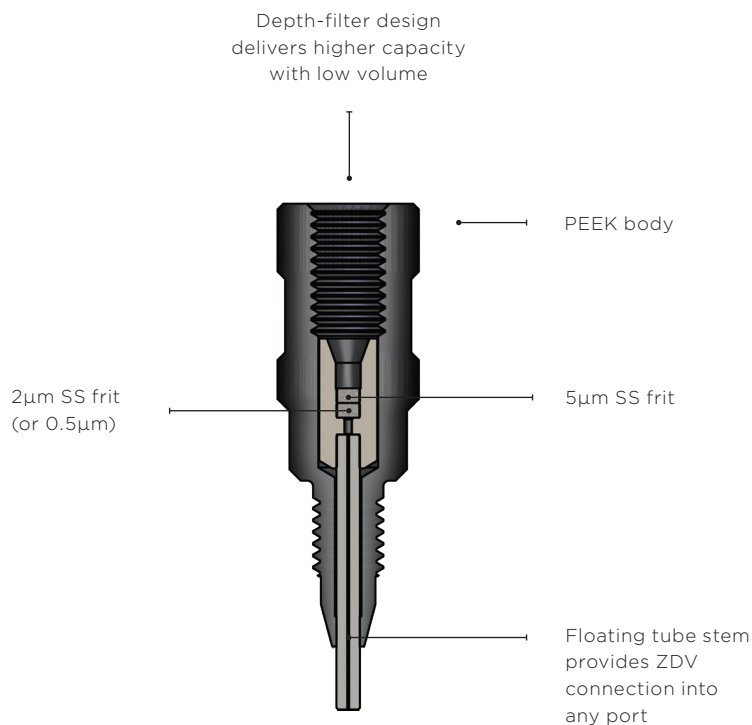
OPTI-SOLV® MINI FILTER



The OPTI-SOLV Mini Filter provides low-impact filtration in a package no larger than a finger-tight fitting. Use the Mini Filter to extend the life of analytical columns or before mass spectrometers as a last line of defense against debris.

Perfect zero-dead-volume connections are obtained every time with the patented automatic tube stop depth adjustment. Unique depth-filtering elements allow for greater capacity with no band spreading or loss of performance. The efficient design requires no holder and threads directly into any 10-32 port.

THE OPTI-SOLV® MINI, MICRO & NANO FILTERS AUTOMATICALLY ADJUST TO FIT ALL BRANDS OF COLUMNS.



OPTI-SOLV® Mini Filters

10-04-00095 OPTI-SOLV Mini Filter, 0.5µm, 5/Pk

10-04-00097 OPTI-SOLV Mini Filter, 2.0µm, 5/Pk

10-04-02768 OPTI-SOLV Mini Filter, 5.0µm, 5/Pk

OPTI-SOLV® MICRO FILTER



For volume critical filtering needs, Optimize offers the OPTI-SOLV Micro Filter. Based on the design that made the Mini Filter successful, the Micro Filter cuts the internal volume to less than 200nL while retaining the ease of use and functionality of the Mini Filter.

The Micro Filter is designed to be used in today's low volume, high sensitivity chromatographic applications as a last line of defense against debris. As with all Optimize column protection products, the OPTI-SOLV Micro Filter features a zero-dead-volume connection utilizing patented floating stem (auto-adjusting) technology.

OPTI-SOLV® Micro Filters

10-04-03621	OPTI-SOLV Micro Filter, 0.5µm, 5/Pk
10-04-03357	OPTI-SOLV Micro Filter, 1.0µm, 5/Pk
10-04-03389	OPTI-SOLV Micro Filter, 2.0µm, 5/Pk
10-04-03707	OPTI-SOLV Micro Filter, 10µm, 5/Pk

OPTI-SOLV® Biocompatible Micro Filters

10-04-03936	OPTI-SOLV Biocompatible Micro Filter, 0.5µm, 5/Pk Wetted materials: PEEK and titanium
--------------------	--

OPTI-SOLV® NANO FILTER

The OPTI-SOLV Nano Filter cuts the internal volume down even further. With less than 50nL of internal volume, the OPTI-SOLV Nano Filter is ideal for mass spectrometry to protect electrospray and nanospray tips from clogging with debris.

OPTI-SOLV® Nano Filter

10-04-03625	OPTI-SOLV Nano Filter, 0.5µm, 5/Pk
--------------------	------------------------------------

OPTI-SOLV® Biocompatible Nano Filter

10-04-03939	OPTI-SOLV Biocompatible Nano Filter, 0.5µm, 5/Pk Wetted materials: PEEK and titanium
--------------------	---

The OPTI-SOLV® Mini, Micro and Nano filters are easy to use and perform exceptionally well for volume-critical applications.

Advantages of the OPTI-SOLV® Mini, Micro and Nano Filters:

- Designed to filter out particles to extend column life
- Perfect Zero-Dead-Volume connections every time
- Floating stem automatically adjusts to any depth port
- Hand-tight - no tools required
- Rated to 6,000 psi



Modern UHPLC and UHPLC/MS instrumentation pushes the envelope in fluid handling with tiny passages and extremely high pressures. At any time, an unprotected system is a stray 1 μ m seal fragment away from failure, loss of data continuity and subsequent troubleshooting and repair. The best assurance against this costly prospect comes from safeguarding your system with thorough filtration.

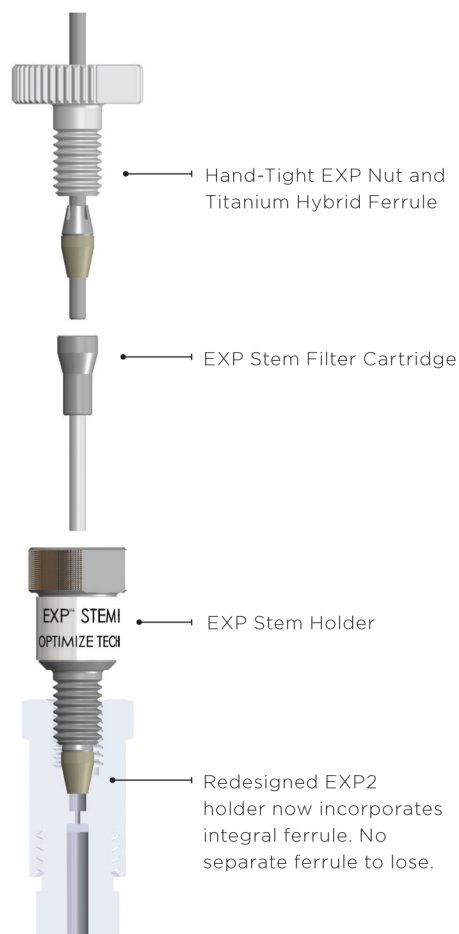
The EXP2 Stem Filter features a choice of frit porosities integrated with our patented auto-adjusting stem for repeated ZDV connections with any 10-32 port. The entire filter stem and reusable holder are only slightly larger than a standard HPLC fitting. The slim architecture allows it to easily fit into crowded instrument compartments, tightly-spaced injection ports and anywhere else an extra level of protection against clogging and contamination is necessary. The EXP2 Stem Filter is an ideal solution to protect expensive UHPLC columns, injectors, autosamplers and MS electrospray tips without extra-column effects.

When tightened by hand, the EXP2 Stem Filter seals to 8,700+ psi. The reusable holder hardware also incorporates wrench flats to enable flawless sealing to 20,000+ psi (1,400+ bar). The EXP2 Stem Filter is the ultimate low-impact protection for expensive UHPLC and MS equipment, assuring trouble-free performance allowing the user to concentrate on the data, not troubleshooting.

Advantages of the EXP[®]2 Stem Filter

- Approved for use at 20,000+ psi (1,400+ bar)
- Hand-tight and wrench-tight configuration
- Reusable holder intended for many repeat uses
- Auto-adjusting ZDV connections
- Low-dispersion cartridges
- Custom volumes/porosities available
- Ultra-low .27 μ L total swept volume
- New EXP2 design incorporates integral ferrule into the front-end of the holder. No separate ferrule to lose.

actual size



EXP[®]2 Stem Filter Kit

Kits below include holder, 3 stem filter cartridges and fittings

15-04-04122 0.2 μ m, Filter Kit

15-04-04123 0.5 μ m, Filter Kit

EXP[®]2 Stem Filter Cartridges

15-04-04117 0.2 μ m, Filter Cartridge, 5/Pk

15-04-04119 0.5 μ m, Filter Cartridge, 5/Pk

The EXP2 Pre-Column and In-Line Hand-Tight Filters are ideal for protecting small-particle UHPLC columns and systems at extreme pressures. Such techniques analyze samples in the most demanding applications, decreasing the life of expensive hardware. EXP2 Filters help extend the life of a UHPLC system and protect your investment without sacrificing performance. Free-Turn[®] architecture allows the user to change cartridges by hand without breaking fluid connections on the holder inlet/outlet.

EXP2 Pre-Column Filter holders are available with Titanium Hybrid Ferrules for easy direct connection to any 10-32 port. The filter holder is a complete package and includes fittings to provide repeated zero-dead-volume connections.

Advantages of EXP[®]2 Filters

- Approved for use at 20,000+ psi (1,400+ bar)
- Hand-tight filter replacement - no tools needed
- Auto-adjusting ZDV connections
- Depth filtration maximizes capacity
- Low-volume, low-dispersion cartridges
- Hardened stainless steel end cap eliminates galling
- New design offers more cost efficient cartridges

EXP[®]2 Filter Holders

15-04-05242 EXP2 Pre-Column Filter Holder

15-04-05258 EXP2 In-Line Filter Holder

The above holders include fittings

EXP[®]2 Filter Cartridges

5 PACK

15-04-05263

10 PACK

15-04-05264

0.2µm, 3mm Cartridge

15-04-05261

15-04-05262

0.5µm, 3mm Cartridge

15-04-05259

15-04-05260

2µm, 3mm Cartridge

EXP[®] Filter Cartridges (Old Style)

5 PACK

15-04-03096

10 PACK

15-04-03097

0.2µm Cartridge

15-04-03093

15-04-03094

0.5µm Cartridge

Pre-Column
Filter Holder



In-line Filter
Holder



EXP 10-32 Fitting

Free-Turn
Holder Cap



Uni-Directional
Cartridge with
Depth Filtration



Holder Body



Auto-Adjusting
Titanium Hybrid
Ferrule for
ZDV Connections

