

Cleaning Up

Sample preparation has always been one of the most important steps in successful chromatography. It has also been one of the most time consuming. In recent years the main methods of removing interfering materials and particles have moved away from time consuming liquid extractions to the use of small devices such as syringe filters or solid phase extraction cartridges.

The most useful devices are those that give simple removal of suspended material. This solid material can block tubing and seriously damage columns if injected into HPLC systems.

This usually means the use of syringe filters.

There are some important changes in the syringe filters from Chromacol.



- **Chromacol Syringe Filters are increasing in size.**
- **There is an increased range of membrane choice.**

What is improved and what does it mean to users?

- **Increased Diameter** — Our filters now are 30mm instead of 25 and 17 instead of 13mm. The increased diameter produces a greater level of sample throughput before clogging.
- The user can now filter up to 50% more sample through the filters than previously, before they fail from blockage. Of course this increase is dependant on the sample itself and sample matrix.
- **Increased Surface Area** — The backpressure when filtering will be reduced. This is because the cross section area is now larger for the same applied downward pressure when using a syringe.
- Less back pressure means an easier time when filtering, especially for customers who filter many samples at a time or those samples who contain a higher level of particulates
- Polyether Sulphone (PES), Cellulose Acetate (CA), Polypropylene (PP), Regenerated Cellulose (RC) and Glass Micro-Fibre (GMF) filters are added to the range.
- GMF Pre-filters are available on 30mm PTFE, Nylon , PP and RC units.



Product Guide

Membrane Applications and Solvent Compatibilities

Nylon

0.45µm membrane

Well established for filtration of aqueous and organic solutions. Broad chemical compatibility with organic and aqueous solvents but should avoid concentrated acids.

High protein binding.

Recommended for most HPLC applications.

0.20µm membrane

Recommended for fine particle removal.

1.5µm and 5µm membrane

Larger pore sizes are available for larger particulate contamination.

PTFE

0.45µm membranes

Well established for filtration of organic solutions

Broad chemical compatibility with organic solvents.

Recommended for GC applications.

Can be used for degassing organic mobile phases.

0.20µm membranes

Recommended for fine particle removal

May also be used as a vent filter

Larger pore sizes also available

PVDF

0.45µm membrane

Well established for filtration of aqueous and mild organic solutions

Low protein binding

Recommended for Bio-molecular and HPLC applications.

0.20µm membranes

Recommended for fine particle removal

Polyether Sulphone (PES)

Ion chromatography validated.

Used for primarily aqueous applications as poor organic solvent resistance. Low levels of ionic extractable make this an ideal filter for acidic, ionic solutions prior to Ion Chromatography.

Polypropylene (PP)

Hydrophobic membrane suitable for use in aqueous or organic media.

Low binding of proteins so can be used for bio-molecular clean-up.

0.20µm membranes

Recommended for fine particle removal

Glass Fibre (GMF)

Bulk filter for large particle removal.

Used as a pre-filter for protection of narrow pore membranes.

Regenerated Cellulose (RC)

0.45µm membrane

Well established for filtration of aqueous/organic solutions

Low protein binding

Recommended for Biomolecular and HPLC applications.

With pre-filter may be used with tissue cultures.

Can be used for HPLC solvent degassing.

0.20µm membrane

Recommended for fine particle removal

Cellulose Acetate (CA)

0.45µm membrane

Well established for filtration of aqueous solutions

Very low protein binding

Recommended for Biomolecular and HPLC applications.

0.20µm membrane

Recommended for fine particle removal

Chemical Compatibility

Chemical Type	NY	PTFE	PVDF	PES	GMF	RC	CA
Acids	*	***	***	***	***	**	*
Alkali-	***	***	**	***	***	**	**
Alcohol	***	***	***	***	***	***	**
Hydrocarbon	***	***	***	*	***	***	***
Halogenated	***	***	***	*	***	***	**
Solvents							
Ketones	***	***	*	*	***	***	**
Esters	***	***	**	*	***	***	**
DMSO	***	***	*	*	***	***	*
Acetonitrile	***	***	***	*	***	***	*

*** Good

** Use with care

* Avoid



Product Guide

Competitors

Chromacol Cross Reference Syringe Filter Units
 Syringe Filters
 Alternative parts are based on a direct technical comparison.
 Part numbers at format are based upon close stock quantity.
 Inclusion of parts is no guarantee of identical performance.

Chromacol	Target	Trade names GDX/ Easydisc	Trade names Millex	Trade names Acrodisc	Trade names Acrodisc	
	NATIONAL SCIENTIFIC	Whatman	MILLIPORE	Waters	PALL	
	National Target	Whatman	Milipore	Waters	PALL	
30-SF-45(N)	30mm SYRINGE FILTERS NYLON -0.45 µm	P2500-1	67 10-2504	SLHN 025NS	WAT200522	4438
30-SF-02(N)	30mm SYRINGE FILTERS NYLON -0.20 µm	P2500-2	6871-2502	SLGN 025NS	WAT200518	4436
30-SF-45(T)	30mm SYRINGE FILTERS TEFLON -0.45 µm	P2500-3	67 14-2504	SLFH 025NS	WAT200500	4219
30-SF-02(T)	30mm SYRINGE FILTERS TEFLON -0.20 µm	P2500-4	67 84-2502	SLRG 025NS	WAT200504	4225
30-SF-45(PV)	30mm SYRINGE FILTERS PVDF -0.45 µm	P2500-5	67 12-2504	SLHW 025NS	WAT200510	4408
30-SF-02(PV)	30mm SYRINGE FILTERS PVDF -0.20 µm	P2500-6	6872-2502	SLGV 025NS		4406
30-SF-45(CA)	30mm SYRINGE FILTERS CELLULOSE ACETATE -0.45 µm	P2500-1S	6830-2504			
4-SF-45(N)	4mm SYRINGE FILTERS NYLON -0.45 µm	P2504-1	67 90-0404	SLHN RD4NL	WAT200526	4484
4-SF-02(N)	4mm SYRINGE FILTERS NYLON -0.20 µm	P2504-2	67 90-0402	SLGN RD4NL		
4-SF-45(T)	4mm SYRINGE FILTERS TEFLON -0.45 µm	P2504-3	67 83-0404	SLFH RD4NL	WAT200508	4472
4-SF-02(T)	4mm SYRINGE FILTERS TEFLON -0.20 µm	P2504-4	67 83-0402	SLRG RD4NL		
4-SF-45(PV)	4mm SYRINGE FILTERS PVDF -0.45 µm	P2504-5	67 79-0404	SLHW RD4NL		
4-SF-02(PV)	4mm SYRINGE FILTERS PVDF -0.2 µm	P2504-6	67 79-0402	SLGV RD4NL		4415
17-SF-45(N)	17mm SYRINGE FILTERS NYLON -0.45 µm	P2513-1	67 90-1304	SLHN D13NL	WAT200520	4426
17-SF-02(N)	17mm SYRINGE FILTERS NYLON -0.20 µm	P2513-2	67 90-1302	SLGN D13NL	WAT200524	4427
17-SF-45(T)	17mm SYRINGE FILTERS TEFLON -0.45 µm	P2513-3	67 83-1304	SLFH D13NL	WAT200502	4422
17-SF-02(T)	17mm SYRINGE FILTERS TEFLON -0.20 µm	P2513-4	67 83-1302	SLRG D13NL	WAT200506	4423
17-SF-45(PV)	17mm SYRINGE FILTERS PVDF -0.45 µm	P2513-5	67 94-1304	SLHW D13NL	WAT200512	4457
17-SF-02(PV)	17mm SYRINGE FILTERS PVDF -0.20 µm	P2513-6		SLGV RD4NL		4455

The above table shows part numbers of competitor's products for the most common of the Econofil syringe filter range.

Devices



30mm Syringe Filter Unit Polypropylene Body
 Luer-Lock inlet/Luer Outlet
 5mL sample throughput.
 Hold-up Volume < 137µL
 For larger sample volumes.
 Suitable for 4mL analytical and storage samples.



17mm Syringe Filter Unit Polypropylene Body
 Luer-Lock inlet/Luer Outlet
 2mL sample throughput.
 Hold-up Volume < 29µL
 For analytical sample volumes. Use with standard 2mL vials.



4mm Syringe Filter Unit Polypropylene Body
 Luer-Lock inlet/Luer Outlet
 1mL sample
 Hold-up Volume < 15µL
 For micro sampling.
 Use with Micro+ vials for maximum sample recovery.





Product Guide

Ordering

Description	Pack	Existing Chromacol	New Chromacol
NYLON			
Syringe Filter, NY, 0.45um, 4mm	100/pk	4-MF-45(N)	4-SF-45(N)
Syringe Filter, NY, 0.2um, 4mm	100/pk	4-MF-02(N)	4-SF-02(N)
Syringe Filter, NY, 0.45um, 17mm	100/pk	13-MF-45(N)	17-SF-45(N)
Syringe Filter, NY, 0.2um, 17mm	100/pk	13-MF-02(N)	17-SF-02(N)
Syringe Filter, NY, 0.45um, 30mm	100/pk	25-MF-45(N)	30-SF-45(N)
Syringe Filter, NY, 0.2um, 30mm	100/pk	25-MF-02(N)	30-SF-02(N)
Syringe Filter, NY, 1.5um, 30mm	100/pk		30-SF-15(N)
Syringe Filter, NY, 5um, 30mm	100/pk		30-SF-50(N)
Syringe Filter, NY, 0.45um, 30mm with pre-filter	100/pk		30-SF-45(N)P
Syringe Filter, NY, 0.2um, 30mm with pre-filter	100/pk		30-SF-02(N)P
PTFE			
Syringe Filter, PTFE, 0.45um, 4mm	100/pk	4-MF-45(T)	4-SF-45(T)
Syringe Filter, PTFE, 0.2um, 4mm	100/pk	4-MF-02(T)	4-SF-02(T)
Syringe Filter, PTFE, 0.45um, 17mm	100/pk	13-MF-45(T)	17-SF-45(T)
Syringe Filter, PTFE, 0.2um, 17mm	100/pk	13-MF-02(T)	17-SF-02(T)
Syringe Filter, PTFE, 0.45um, 30mm	100/pk	25-MF-45(T)	30-SF-45(T)
Syringe Filter, PTFE, 0.2um, 30mm	100/pk	25-MF-02(T)	30-SF-02(T)
Syringe Filter, PTFE, 1um, 30mm	100/pk		30-SF-10(T)
Syringe Filter, PTFE, 5um, 30mm	100/pk		30-SF-50(T)
Syringe Filter, PTFE, 0.45um, 30mm with pre-filter	100/pk		30-SF-45(T)P
PVDF			
Syringe Filter, PVDF, 0.45um, 4mm	100/pk	4-MF-45(PV)	4-SF-45(PV)
Syringe Filter, PVDF, 0.2um, 4mm	100/pk	4-MF-02(PV)	4-SF-02(PV)
Syringe Filter, PVDF, 0.45um, 17mm	100/pk	13-MF-45(PV)	17-SF-45(PV)
Syringe Filter, PVDF, 0.2um, 17mm	100/pk	13-MF-02(PV)	17-SF-02(PV)
Syringe Filter, PVDF, 0.45um, 30mm	100/pk	25-MF-45(PV)	30-SF-45(PV)
Syringe Filter, PVDF, 0.2um, 30mm	100/pk	25-MF-02(PV)	30-SF-02(PV)
CA			
Syringe Filter, Cellulose Acetate, 0.45um, 4mm	100/pk		4-SF-45(CA)
Syringe Filter, Cellulose Acetate, 0.2um, 4mm	100/pk		4-SF-02(CA)
Syringe Filter, Cellulose Acetate, 0.45um, 17mm	100/pk		17-SF-45(CA)
Syringe Filter, Cellulose Acetate, 0.2um, 17mm	100/pk		17-SF-02(CA)
Syringe Filter, Cellulose Acetate, 0.45um, 30mm	100/pk	25-MF-45(CA)	30-SF-45(CA)
Syringe Filter, Cellulose Acetate, 0.2um, 30mm	100/pk		30-SF-02(CA)
Regenerated Cellulose			
Syringe Filter, Regenerated Cellulose, 0.45um, 4mm	100/pk		4-SF-45(RC)
Syringe Filter, Regenerated Cellulose, 0.2um, 4mm	100/pk		4-SF-02(RC)
Syringe Filter, Regenerated Cellulose, 0.45um, 17mm	100/pk		17-SF-45(RC)
Syringe Filter, Regenerated Cellulose, 0.2um, 17mm	100/pk		17-SF-02(RC)
Syringe Filter, Regenerated Cellulose, 0.45um, 30mm	100/pk		30-SF-45(RC)
Syringe Filter, RC, 0.45um, 30mm with pre-filter	100/pk		30-SF-045(RC)P
Polypropylene			
Syringe Filter, Polypropylene, 0.45um, 4mm	100/pk		4-SF-45(PP)
Syringe Filter, Polypropylene, 0.2um, 4mm	100/pk		4-SF-02(PP)
Syringe Filter, Polypropylene, 0.45um, 17mm	100/pk		17-SF-45(PP)
Syringe Filter, Polypropylene, 0.2um, 17mm	100/pk		17-SF-02(PP)
Syringe Filter, Polypropylene, 0.45um, 30mm	100/pk		30-SF-45(PP)
Syringe Filter, Polypropylene, 0.45um, 30mm with pre-filter	100/pk		30-SF-45(PP)P
PES			
Syringe Filter, PES, 0.45um, 17mm	100/pk		17-SF-45(PES)
Syringe Filter, PES, 0.2um, 17mm	100/pk		17-SF-02(PES)
Syringe Filter, PES, 0.45um, 30mm	100/pk		30-SF-45(PES)
Syringe Filter, PES, 0.2um, 30mm	100/pk		30-SF-02(PES)
GMF			
Syringe Filter, GMF, 0.7um, 30mm	100/pk		30-SF-07(GMF)
Syringe Filter, GMF, 1.2um, 30mm	100/pk		30-SF-12(GMF)
Syringe Filter, GMF, 3.1um, 30mm	100/pk		30-SF-31(GMF)