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Syringe Filters

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Syringe Filter Information

A syringe filter generally consists of a plastic housing with a membrane which serves as a filter. The fluid to be purified may be cleaned by pressing it through the syringe through the filter. The following chart is designed to help in selecting the correct filter for your project.

Standard Syringe Filter Products			
Filter Diameter	15mm	25mm	30mm
Pore Size	0.20 µm		0.45 µm
Filter Inlet	Luer-Lock Female		
Filter Outlet - 15mm	Luer-Male		Mini Tip
Filter Outlet - 25/30mm	Luer-Male		
Pre-Filter	Available		
Sterile	Available		
Housing	Ultrasonic Welded Polypropylene		
Ring	Color Coded Optional		

Choosing your Syringe Filter

Choosing the Proper Pore Size

Cleaning Operation	Optimal Pore Size
Sterile Filtration	0.20 µm
Thorough Cleaning	0.45 µm
Clear Filtration	1 - 2 µm
Pre-Filtration	5 µm

Choosing the Proper Diameter

Filter Diameter	Volume to be Filtered
4 mm	< 1 ml
13 mm	1 - 10 ml
25 mm	10 - 100 ml
30 mm	> 100 ml (fast filtration)

Pressure of Syringe Volumes

Syringe Volume	Max Operating Pressure
1 ml	10 / 150
3 ml	7.0 / 100
5 ml	5.0 / 75
10 ml	3.5 / 50
20 ml	2.0 / 30

If solutions are difficult to filter, higher pressures may be necessary to force the liquid through the filter. Please reference the maximum operating pressures above when choosing your filters.

Deviations from the specified volumes can occur depending on the particle charging of the liquid to be filtered

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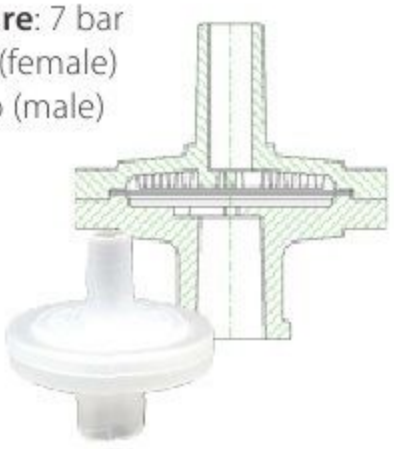
15 mm (Ultrasonic Welded):

Housing Material: Polypropylene
Total Filter Volume: 0.335 ml
Dead Volume: < 25 µl
Filter Area: 177 mm²
Max Op. Pressure: 7 bar
Inlet: Luer-Lock (female)
Outlet: Luer-Slip (male)

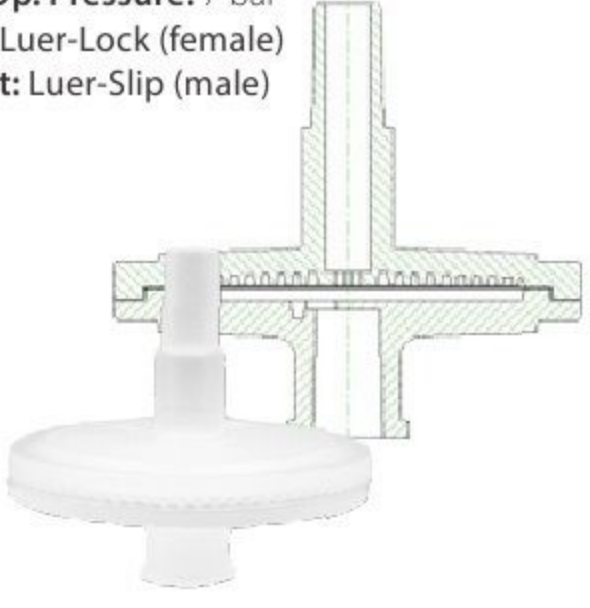


15 mm Mini-Tip (Ultrasonic Welded):

Housing Material: Polypropylene
Total Filter Volume: 0.335 ml
Dead Volume: < 25 µl
Filter Area: 177 mm²
Max Op. Pressure: 7 bar
Inlet: Luer-Lock (female)
Outlet: Mini-Tip

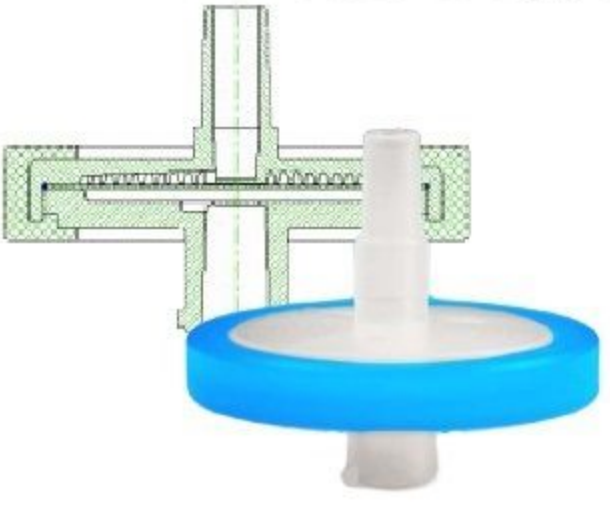
25 mm (Ultrasonic Welded):

Housing Material: Polypropylene
Total Filter Volume: 0.6 ml
Dead Volume: < 65 µl
Filter Area: 490 mm²
Max Op. Pressure: 7 bar
Inlet: Luer-Lock (female)
Outlet: Luer-Slip (male)



25 mm (Ring Version):

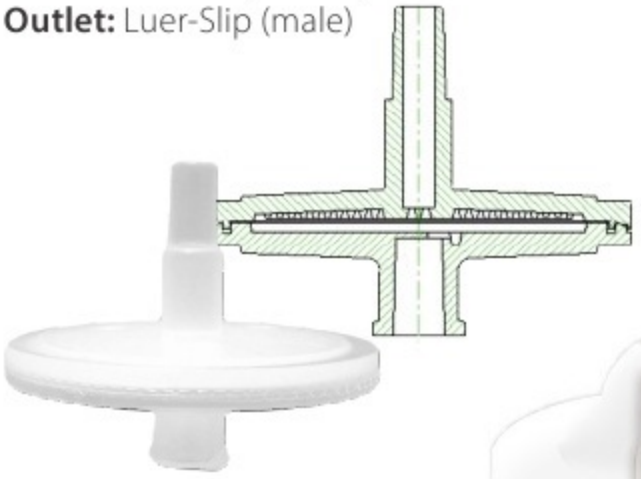
Housing Material: Polypropylene
Total Filter Volume: 0.6 ml
Dead Volume: < 65 µl
Filter Area: 490 mm²
Max Op. Pressure: 7 bar
Inlet: Luer-Lock (female)
Outlet: Luer-Slip (male)



Syringe Filter Anatomy

30 mm (Ultrasonic Welded):

Housing Material: Polypropylene
Total Filter Volume: 0.864 ml
Dead Volume: < 170 µl
Filter Area: 707 mm²
Max Op. Pressure: 6 bar
Inlet: Luer-Lock (female)
Outlet: Luer-Slip (male)



30 mm (Ring Version):

Housing Material: Polypropylene
Total Filter Volume: 0.864 ml
Dead Volume: < 170 µl
Filter Area: 707 mm²
Max Op. Pressure: 6 bar
Inlet: Luer-Lock (female)
Outlet: Luer-Slip (male)

Sterile Packaging Options

FILTER SIZE OPTIONS

15 mm
Ultrasonic Welded
Mini-Tip Ultrasonic Welded

25 mm
Ultrasonic Welded
Ring Version

30 mm
Ultrasonic Welded
Ring Version

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Membrane Selection

The following chart will help you choose the appropriate membrane material for your syringe filter. If you have any questions or are unsure which membrane material is appropriate for your task, please contact us at +49 (0) 2421 5901 - 0

Water Soluble - Aqueous

Mechanically Challenging Alkaline Samples	Biological Samples High Protein Adsorption	Biological Samples Low Protein Adsorption
Polyamide (Nylon)	Mixed Cellulose Ester, Cellulose Nitrate	Cellulose Acetate, Polyethersulfone, Polyvinylidenfluoride, Regenerated Cellulose

Organically Soluble

Organic Solvent				Partial Organic Solvent			
NON POLAR				POLAR			
Polyamide (Nylon)	Polyvinylidenfluoride	Polyethylene	Polytetrafluorethylene	Polyethersulfone	Polyester	Regenerated Cellulose	Cellulose Acetate

Gaseous

Polyethylene	Polytetrafluorethylene	Strong Oxidizing Gases
		Polytetrafluorethylene

Syringe Filter Information

SYRINGE FILTER MEMBRANE COMPATIBILITY

Use the information in this table to determine the ability of a specific syringe filter to withstand exposure to a solvent. All concentrations are 100% unless noted.

LEGEND

- ✓ Compatible
- ! Limited Compatibility
- ⊘ Incompatible (Not Recommended)
- ? No Compatibility Data Available

PTFE = Polytetrafluorethylene
PVDF = Polyvinylidenefluoride
PES = Polyethersulfone

CN = Cellulose Nitrate
CA = Cellulose Acetate
RC = Regenerated Cellulose
PY = Polyethylene
PA = Polyamide Nylon®
PC = Polycarbonate
PET = Polyester
CME = Cellulose Mixed Ester

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✓ Compatible ! Limited Compatibility ? No Compatibility Data Available ⊘ Incompatible (Not Recommended)

Chemical	PA	PTFE	PVDF	CA	RC	PY	PC	PET	CME	CN	PES
Acids											
Acetic, Glacial	✓	✓	✓	✓	✓	✓	?	✓	⊘	⊘	✓
Acetic, 2%	⊘	✓	✓	⊘	⊘	✓	✓	✓	!	!	✓
Hydrochloric, concentrated	⊘	✓	✓	⊘	⊘	✓	✓	⊘	⊘	⊘	✓
Sulfuric, concentrated	⊘	✓	⊘	⊘	⊘	✓	⊘	?	⊘	⊘	⊘
Sulfuric, 25%	⊘	✓	✓	⊘	!	✓	?	?	!	⊘	?
Nitric, concentrated	⊘	✓	✓	⊘	⊘	✓	✓	!	⊘	⊘	⊘
Nitric, 25%	⊘	✓	✓	⊘	⊘	✓	?	?	!	!	!
Phosphoric, 25%	⊘	✓	?	✓	!	✓	?	✓	!	?	?
Formic, 25%	⊘	✓	?	!	✓	✓	?	!	✓	!	✓
Trichloroaectic, 10%	⊘	✓	?	✓	✓	✓	?	?	?	?	?
Alcohols											
Methanol, 98%	✓	✓	✓	✓	✓	✓	✓	✓	⊘	⊘	✓
Ethanol, 98%	✓	✓	✓	✓	✓	✓	✓	✓	⊘	⊘	✓
Ethanol, 70%	!	✓	✓	!	✓	✓	✓	✓	⊘	⊘	✓
Isopropanol	✓	✓	✓	✓	✓	✓	!	✓	✓	✓	✓
n-Propanol	✓	✓	✓	✓	✓	✓	!	✓	✓	✓	✓
Amyl Alcohol (Butanol)	✓	✓	✓	✓	✓	✓	?	✓	✓	✓	✓
Benzyl Alcohol	✓	✓	✓	!	✓	✓	!	?	!	!	⊘
Ethylene Glycol	✓	✓	✓	✓	✓	✓	✓	✓	!	!	✓
Propylene Glycol	✓	✓	✓	!	✓	✓	?	?	?	?	?
Glycerol	✓	✓	✓	✓	✓	✓	?	?	✓	?	?
Alkalis											
Ammonium Hydroxide, 25%	✓	✓	!	✓	!	✓	⊘	!	!	⊘	✓
Sodium Hydroxide, 3N	✓	✓	✓	⊘	!	✓	⊘	!	⊘	⊘	✓
Amines & Amides (Solvents with Nitrogen)											
Dimethyl Formamide	!	✓	⊘	⊘	!	✓	?	✓	⊘	⊘	⊘
Diethylacetamide	✓	✓	?	⊘	✓	?	?	?	?	?	?
Triethanolamine	✓	✓	?	✓	✓	?	?	?	?	?	?
Aniline	?	✓	?	⊘	✓	?	?	?	?	?	?
Pridine	✓	✓	✓	⊘	✓	!	⊘	?	⊘	⊘	⊘

Syringe Filter Membrane Compatibility

✓ Compatible ! Limited Compatibility ? No Compatibility Data Available ⊘ Incompatible (Not Recommended)

Chemical	PA	PTFE	PVDF	CA	RC	PY	PC	PET	CME	CN	PES
Esters											
Ethyl, Methyl Acetate	✓	✓	✓	⊘	✓	!	!	✓	⊘	⊘	⊘
Amyl, Propyl, Butyl Acetate	✓	✓	?	!	✓	!	✓	?	?	⊘	✓
Propylene Glycol Acetate	?	✓	?	⊘	✓	✓	?	?	?	?	?
2-Ethoxyethyl Acetate	?	✓	?	!	✓	?	?	?	?	?	?
Methyl Cellosolve Acetate	?	✓	?	⊘	✓	✓	?	?	?	?	?
Benzyl Benzoate	✓	✓	?	✓	✓	?	?	?	?	?	?
Isopropyl Myristate	✓	✓	?	✓	✓	?	?	?	?	?	?
Tricresyl Phosphate	?	✓	?	✓	✓	?	?	?	?	?	?
Halogenated Hydrocarbons											
Methylene Chloride	!	✓	✓	⊘	✓	!	?	✓	?	!	⊘
Chloroform	✓	✓	✓	⊘	✓	!	⊘	✓	✓	✓	⊘
Trichloroethylene	✓	✓	✓	✓	✓	!	?	✓	✓	✓	⊘
Monochlorobenzene, Freon	✓	✓	✓	✓	✓	✓	✓	?	?	✓	✓
Carbon Tetrachloride	✓	✓	✓	!	✓	!	!	✓	✓	✓	✓
Hyrdrocarbons											
Hexane / Xylene	✓	✓	✓	✓	✓	⊘	✓	✓	✓	✓	✓
Toulene / Benzene	✓	✓	✓	✓	✓	⊘	!	✓	✓	✓	✓
Kerosene / Gasolene	✓	✓	✓	✓	✓	!	!	✓	✓	✓	✓
Tetralin / Decalin	?	✓	✓	✓	✓	?	?	?	?	?	?
Ketones											
Acetone / Cyclohexanone	✓	✓	⊘	⊘	✓	✓	⊘	✓	⊘	⊘	⊘
Methyl Ethyl Ketone	✓	✓	!	!	✓	!	!	?	?	⊘	⊘
Isopropylacetone	✓	✓	⊘	✓	✓	?	?	?	?	?	⊘
Methyl Isobutyl Ketone	?	✓	!	?	✓	⊘	?	?	?	⊘	✓
Organic Oxides											
Ethyl Ether	✓	✓	✓	✓	✓	⊘	✓	✓	!	!	✓
Dioxane & Tetrahydrofuran	✓	✓	!	⊘	✓	✓	⊘	!	⊘	⊘	⊘
Dimethylsulfoxide (DMSO)	✓	✓	⊘	⊘	✓	✓	⊘	?	⊘	⊘	⊘
Isopropyl Ether	?	✓	✓	✓	✓	✓	✓	?	?	!	✓
Miscellaneous											
Phenol, Aqueous 10%	?	✓	!	⊘	⊘	✓	?	?	⊘	!	?
Hydrogen Peroxide, 30%	✓	✓	?	✓	✓	?	?	?	?	?	?
Silicone Oil & Mineral Oil	?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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MEMBRANE CHARACTERISTICS

The table below offers general guidelines for membrane characteristics and compatible applications.

Membrane Applications		
Membrane Type	**Characteristics**	**Applications**
Regenerated Cellulose	Hydrophilic membrane with good solvent resistance, extremely low nonspecific binding; compatible with nearly all common HPLC solvents; tolerates aqueous samples in pH range of 3 to 12.	Membrane of choice for low nonspecific binding applications; Tissue Culture media filtration and general biological sample preparation.
Polyamide (Nylon)	Most frequently selected membrane; broad compatibility with aqueous and organic naturally hydrophilic membrane; extremely low in extractables; excellent flow rate with most sample matrices; not compatible with strong acids or bases.	General laboratory filtration; filtration for most samples; HPLC samples. NOTE: Nylon binds protein, do not use when high protein recovery is desired.
Polytetrafluorethylene	Hydrophobic PTFE membrane is resistant to nearly all solvents, acids, and bases; membrane is mechanically strong and will withstand exposure to high temperature liquids; low in extractables; PTFE blocks aqueous liquids but water vapor can still pass through; can be used to filter aqueous solutions after pre-wetting with an alcohol.	Filtration of aggressive organic, highly basic or hot solutions. Ideal for transducer protectors.
Polyvinylidenefluoride	Due to its slight hydrophobic characteristics it can be used for clear filtration of organic or partly organic solvents. Because of its good chemical resistance it is compatible with a wide range of organic and inorganic solvents (not to be used with e.g.: concentrated sulfuric acid, Ketones, DMSO)	The Polyvinylidenefluoride membrane is frequently used for chromatography sample preparation or for pharmaceutical applications.
Polyethylene	Hydrophobic membrane has wide chemical compatibility with organic solvents; low non-specific protein binding.	Filtration of biological samples; filtration of aggressive organic solutions.
Polyethersulfone	High flow rates with good throughput volume; low protein binding; compatible with high temperature liquids; mechanically strong membrane low in extractable ions.	PES is certified for ion chromatography; tissue culture filtration; filtration of proteins and nucleic acids.
Mixed Cellulose Ester	Naturally hydrophilic membrane with high flow rates and high protein binding. One of the most utilized membranes for microbiological applications. Good wet-ability and filtration performance for aqueous solutions. Can not be used with strong acids, bases, and alcohol.	Ideal for use in general filtration, medical assays, or diagnostic kit manufacturing applications.
Cellulose Acetate	Low protein binding, ideal for aqueous based samples; high protein recovery from filtrate; lower protein binding compared to PVDF. One of the most utilized membranes for sample preparation.	Tissue culture media filtration, sensitive biological samples.
Glass Fiber	Larger porosity; able to remove large particulates without clogging.	Primarily used as a pre-filter in conjunction with another membrane. Can be paired with most membranes - but typically with RC, CA, Nylon and PVDF.

Syringe Filter Membrane Types

SYRINGE FILTER TYPES

A syringe filter generally consists of a plastic housing with a membrane which serves as a filter. The fluid to be purified may be cleaned by pressing it through the syringe through the filter. We offer three filter diameters: 15mm, 25mm and 30mm with membranes made of the following materials:

- RC - Regenerated Cellulose
- PA - Polyamide (Nylon)
- PTFE - Polytetrafluorethylene
- PVDF - Polyvinylidenefluoride
- PP - Polypropylene
- PS - Polyether Sulfone
- CM - Cellulose Mixed Ester
- CA - Cellulose Acetate
- GF - Fiberglass Fleece

Custom sizes and filter types are available upon request.

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DIAFIL - Regenerated Cellulose (RC)

Regenerated Cellulose membranes are particularly suitable for the filtration of tissue culture media and general biological sample filtration due to it's low, non-specific binding characteristics for proteins.

Diameter (mm)	Pore Size	Pre-Filter	Item Number	Description	Housing	Sterile	Connections inlet / outlet
15	0.2	-	5078020D	FRC150020	USV	-	LLF / LSM
	0.2	-	5120145D	FRC140020	USV	-	LLF / MiniTip
	0.45	-	5078022D	FRC150045	USV	-	LLF / LSM
	0.45	-	5078019D	FRC140045	USV	-	LLF / MiniTip
	0.2	-	5078021D	FRC150020S	USV	yes	LLF / LSM
	0.45	-	5078023D	FRC150045S	USV	yes	LLF / LSM
	0.2	-	5123554D	FRC140020S	USV	yes	LLF / MiniTip
	0.45	-	5126249D	FRC140045S	USV	yes	LLF / MiniTip
25	0.2	-	5078026D	FRC250020	USV	-	LLF / LSM
	0.45	-	5078032D	FRC250045	USV	-	LLF / LSM
	0.2	-	5078028D	FRC250020S	USV	yes	LLF / LSM
	0.45	-	5078034D	FRC250045S	USV	yes	LLF / LSM
	0.2	-	5078029D	FRC250020R	RV	-	LLF / LSM
	0.45	-	5078035D	FRC250045R	RV	-	LLF / LSM
	0.2	-	5078030D	FRC250020RS	RV	yes	LLF / LSM
	0.45	-	5078036D	FRC250045RS	RV	yes	LLF / LSM
	0.2	yes	5078031D	FRC250020RV	RV	-	LLF / LSM
	0.45	yes	5078037D	FRC250045RV	RV	-	LLF / LSM
	0.2	yes		FRC250020RVS	RV	yes	LLF / LSM
	0.45	yes		FRC250045RVS	RV	yes	LLF / LSM
30	0.2	-	5120248D	FRC300020	USV	-	LLF / LSM
	0.45	-	5078054D	FRC300045	USV	-	LLF / LSM
	0.2	-	5121017D	FRC300020S	USV	yes	LLF / LSM
	0.45	-		FRC300045S	USV	yes	LLF / LSM
	0.2	-	5078052D	FRC300020R	RV	-	LLF / LSM
	0.45	-	5078055D	FRC300045R	RV	-	LLF / LSM
	0.2	-		FRC300020RS	RV	yes	LLF / LSM
	0.45	-		FRC300045RS	RV	yes	LLF / LSM
	0.2	yes	5078053D	FRC300020RV	RV	-	LLF / LSM
	0.45	yes	5078056D	FRC300045RV	RV	-	LLF / LSM
	0.2	yes		FRC300020RVS	RV	yes	LLF / LSM
	0.45	yes		FRC300045RVS	RV	yes	LLF / LSM

USV: Ultrasonic Welded Version. **RV:** Ring Version. **LLF:** Luer-Lock Female. **LSM:** Luer-Slip Male

Syringe Filter Types

DIAFIL - Polyamide Nylon (PA)

Nylon (Polyamide) membranes are particularly suitable for General Laboratory filtration. This includes filtration for most HPLC samples. It is also used for the clarification and sterilization of alkaline solutions. This membrane has high mechanical stability.

Diameter (mm)	Pore Size	Pre-Filter	Item Number	Description	Housing	Sterile	Connections inlet / outlet
15	0.2	-	5077834D	FPA150020	USV	-	LLF / LSM
	0.2	-	5120150D	FPA140020	USV	-	LLF / MiniTip
	0.45	-	5077836D	FPA150045	USV	-	LLF / LSM
	0.45	-	5077833D	FPA140045	USV	-	LLF / MiniTip
	0.2	-	5077835D	FPA150020S	USV	yes	LLF / LSM
	0.45	-	5077837D	FPA150045S	USV	yes	LLF / LSM
	0.2	-	5121438D	FPA140020S	USV	yes	LLF / MiniTip
	0.45	-		FPA140045S	USV	yes	LLF / MiniTip
25	0.2	-	5077844D	FPA250020	USV	-	LLF / LSM
	0.45	-	5077850D	FPA250045	USV	-	LLF / LSM
	0.2	-	5077845D	FPA250020S	USV	yes	LLF / LSM
	0.45	-	5077852D	FPA250045S	USV	yes	LLF / LSM
	0.2	-	5077847D	FPA250020R	RV	-	LLF / LSM
	0.45	-	5077853D	FPA250045R	RV	-	LLF / LSM
	0.2	-	5077848D	FPA250020RS	RV	yes	LLF / LSM
	0.45	-	5077854D	FPA250045RS	RV	yes	LLF / LSM
	0.2	yes	5077849D	FPA250020RV	RV	-	LLF / LSM
	0.45	yes	5077855D	FPA250045RV	RV	-	LLF / LSM
	0.2	yes		FPA250020RVS	RV	yes	LLF / LSM
	0.45	yes		FPA250045RVS	RV	yes	LLF / LSM
30	0.2	-	5077875D	FPA300020	USV	-	LLF / LSM
	0.45	-	5077879D	FPA300045	USV	-	LLF / LSM
	0.2	-	5120179D	FPA300020S	USV	yes	LLF / LSM
	0.45	-		FPA300045S	USV	yes	LLF / LSM
	0.2	-	5077877D	FPA300020R	RV	-	LLF / LSM
	0.45	-	5077882D	FPA300045R	RV	-	LLF / LSM
	0.2	-		FPA300020RS	RV	yes	LLF / LSM
	0.45	-		FPA300045RS	RV	yes	LLF / LSM
	0.2	yes	5077878D	FPA300020RV	RV	-	LLF / LSM
	0.45	yes	5077883D	FPA300045RV	RV	-	LLF / LSM
	0.2	yes		FPA300020RVS	RV	yes	LLF / LSM
	0.45	yes		FPA300045RVS	RV	yes	LLF / LSM

USV: Ultrasonic Welded Version. **RV:** Ring Version. **LLF:** Luer-Lock Female. **LSM:** Luer-Slip Male

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DIAFIL - Polytetrafluorethylene (PTFE)

Polytetrafluorethylene membranes are used for the filtration of aggressive organic, highly basic or hot solutions. Since it has a low resistance to gases, the membrane is also used for air and gas filtration (aeration and ventilation tasks).

Diameter (mm)	Pore Size	Pre-Filter	Item Number	Description	Housing	Sterile	Connections inlet / outlet
15	0.2	-	5077921D	FPT150020	USV	-	LLF / LSM
	0.2	-	5121440D	FPT140020	USV	-	LLF / MiniTip
	0.45	-	5077924D	FPT150045	USV	-	LLF / LSM
	0.45	-	5120818D	FPT140045	USV	-	LLF / MiniTip
	0.2	-	5077923D	FPT150020S	USV	yes	LLF / LSM
	0.45	-	5077925D	FPT150045S	USV	yes	LLF / LSM
	0.2	-	5121442D	FPT140020S	USV	yes	LLF / MiniTip
	0.45	-	5126631D	FPT140045S	USV	yes	LLF / MiniTip
25	0.2	-	5077929D	FPT250020	USV	-	LLF / LSM
	0.45	-	5077937D	FPT250045	USV	-	LLF / LSM
	0.2	-	5077932D	FPT250020S	USV	yes	LLF / LSM
	0.45	-	5077939D	FPT250045S	USV	yes	LLF / LSM
	0.2	-	5077933D	FPT250020R	RV	-	LLF / LSM
	0.45	-	5077940D	FPT250045R	RV	-	LLF / LSM
	0.2	-	5077934D	FPT250020RS	RV	yes	LLF / LSM
	0.45	-	5077941D	FPT250045RS	RV	yes	LLF / LSM
	0.2	yes	5077935D	FPT250020RV	RV	-	LLF / LSM
	0.45	yes	5077942D	FPT250045RV	RV	-	LLF / LSM
	0.2	yes		FPT250020RVS	RV	yes	LLF / LSM
	0.45	yes		FPT250045RVS	RV	yes	LLF / LSM
30	0.2	-	5077959D	FPT300020	USV	-	LLF / LSM
	0.45	-	5077963D	FPT300045	USV	-	LLF / LSM
	0.2	-	5120722D	FPT300020S	USV	yes	LLF / LSM
	0.45	-	5120723D	FPT300045S	USV	yes	LLF / LSM
	0.2	-	5077960D	FPT300020R	RV	-	LLF / LSM
	0.45	-	5077964D	FPT300045R	RV	-	LLF / LSM
	0.2	-	5123281D	FPT300020RS	RV	yes	LLF / LSM
	0.45	-		FPT300045RS	RV	yes	LLF / LSM
	0.2	yes	5077961D	FPT300020RV	RV	-	LLF / LSM
	0.45	yes	5077965D	FPT300045RV	RV	-	LLF / LSM
	0.2	yes		FPT300020RVS	RV	yes	LLF / LSM
	0.45	yes		FPT300045RVS	RV	yes	LLF / LSM

USV: Ultrasonic Welded Version. **RV:** Ring Version. **LLF:** Luer-Lock Female. **LSM:** Luer-Slip Male

Syringe Filter Types

DIAFIL - Polyvinylidenefluoride (PVDF)

The Polyvinylidenefluoride membrane is frequently used for chromatography sample preparation or for pharmaceutical applications. Due to its slight hydrophobic characteristics it can be used for clear filtration of organic or partly organic solvents. Because of its good chemical resistance it is compatible with a wide range of organic and inorganic solvents (not to be used with e.g.: concentrated sulfuric acid, Ketones, DMSO)

Diameter (mm)	Pore Size	Pre-Filter	Item Number	Description	Housing	Sterile	Connections inlet / outlet
15	0.2	-	5077973D	FPV150020	USV	-	LLF / LSM
	0.2	-	5123458D	FPV140020	USV	-	LLF / MiniTip
	0.45	-	5077975D	FPV150045	USV	-	LLF / LSM
	0.45	-	5123457D	FPV140045	USV	-	LLF / MiniTip
	0.2	-	5077974D	FPV150020S	USV	yes	LLF / LSM
	0.45	-	5077976D	FPV150045S	USV	yes	LLF / LSM
	0.2	-	5123378D	FPV140020S	USV	yes	LLF / MiniTip
	0.45	-	5123552D	FPV140045S	USV	yes	LLF / MiniTip
25	0.2	-	5077979D	FPV250020	USV	-	LLF / LSM
	0.45	-	5077984D	FPV250045	USV	-	LLF / LSM
	0.2	-	5077980D	FPV250020S	USV	yes	LLF / LSM
	0.45	-	5077985D	FPV250045S	USV	yes	LLF / LSM
	0.2	-	5077981D	FPV250020R	RV	-	LLF / LSM
	0.45	-	5077986D	FPV250045R	RV	-	LLF / LSM
	0.2	-	5077982D	FPV250020RS	RV	yes	LLF / LSM
	0.45	-	5077987D	FPV250045RS	RV	yes	LLF / LSM
	0.2	yes	5077983D	FPV250020RV	RV	-	LLF / LSM
	0.45	yes	5077988D	FPV250045RV	RV	-	LLF / LSM
	0.2	yes		FPV250020RVS	RV	yes	LLF / LSM
	0.45	yes		FPV250045RVS	RV	yes	LLF / LSM
30	0.2	-	5120247D	FPV300020	USV	-	LLF / LSM
	0.45	-	5078007D	FPV300045	USV	-	LLF / LSM
	0.2	-	5120181D	FPV300020S	USV	yes	LLF / LSM
	0.45	-	5126530D	FPV300045S	USV	yes	LLF / LSM
	0.2	-	5078005D	FPV300020R	RV	-	LLF / LSM
	0.45	-	5078008D	FPV300045R	RV	-	LLF / LSM
	0.2	-		FPV300020RS	RV	yes	LLF / LSM
	0.45	-		FPV300045RS	RV	yes	LLF / LSM
	0.2	yes	5078006D	FPV300020RV	RV	-	LLF / LSM
	0.45	yes	5078009D	FPV300045RV	RV	-	LLF / LSM
	0.2	yes		FPV300020RVS	RV	yes	LLF / LSM
	0.45	yes		FPV300045RVS	RV	yes	LLF / LSM

USV: Ultrasonic Welded Version. **RV:** Ring Version. **LLF:** Luer-Lock Female. **LSM:** Luer-Slip Male

DIAFIL
FILTRATION DEVICES

DIAFIL - Polyethylene (PY)

Polyethylene membranes are hydrophobic and versatile in use. They are attacked by few substances and are relatively inert (except for strong oxidizing agents). They are highly stable and can be used for partly organic media.

Diameter (mm)	Pore Size	Pre-Filter	Item Number	Description	Housing	Sterile	Connections inlet / outlet
15	0.2	-	S121776D	FPY150020	USV	-	LLF / LSM
	0.2	-	S077896D	FPY140020	USV	-	LLF / MiniTip
	0.45	-	S077903D	FPY150045	USV	-	LLF / LSM
	0.45	-	S120188D	FPY140045	USV	-	LLF / MiniTip
	0.2	-	S122226D	FPY150020S	USV	yes	LLF / LSM
	0.45	-	S121819D	FPY150045S	USV	yes	LLF / LSM
	0.2	-		FPY140020S	USV	yes	LLF / MiniTip
	0.45	-		FPY140045S	USV	yes	LLF / MiniTip
25	0.2	-	S077906D	FPY250020	USV	-	LLF / LSM
	0.45	-	S077910D	FPY250045	USV	-	LLF / LSM
	0.2	-	S122608D	FPY250020S	USV	yes	LLF / LSM
	0.45	-		FPY250045S	USV	yes	LLF / LSM
	0.2	-		FPY250020R	RV	-	LLF / LSM
	0.45	-		FPY250045R	RV	-	LLF / LSM
	0.2	-		FPY250020RS	RV	yes	LLF / LSM
	0.45	-		FPY250045RS	RV	yes	LLF / LSM
	0.2	yes	S125077D	FPY250020RV	RV	-	LLF / LSM
	0.45	yes	S123178D	FPY250045RV	RV	-	LLF / LSM
	0.2	yes		FPY250020RVS	RV	yes	LLF / LSM
	0.45	yes		FPY250045RVS	RV	yes	LLF / LSM
30	0.2	-	S122517D	FPY300020	USV	-	LLF / LSM
	0.45	-	S120010D	FPY300045	USV	-	LLF / LSM
	0.2	-	S123412D	FPY300020S	USV	yes	LLF / LSM
	0.45	-		FPY300045S	USV	yes	LLF / LSM
	0.2	-		FPY300020R	RV	-	LLF / LSM
	0.45	-		FPY300045R	RV	-	LLF / LSM
	0.2	-		FPY300020RS	RV	yes	LLF / LSM
	0.45	-		FPY300045RS	RV	yes	LLF / LSM
	0.2	yes		FPY300020RV	RV	-	LLF / LSM
	0.45	yes	S120648D	FPY300045RV	RV	-	LLF / LSM
	0.2	yes		FPY300020RVS	RV	yes	LLF / LSM
	0.45	yes		FPY300045RVS	RV	yes	LLF / LSM

USV: Ultrasonic Welded Version. **RV:** Ring Version. **LLF:** Luer-Lock Female. **LSM:** Luer-Slip Male

Syringe Filter Types

DIAFIL - Polyethersulfone (PS)

Polyethersulfone membranes are hydrophilic and have low protein adsorption. They are primarily used for aqueous or partially organic media (pH 2-12) in pharmaceutical and biological sample preparation.

Diameter (mm)	Pore Size	Pre-Filter	Item Number	Description	Housing	Sterile	Connections inlet / outlet
15	0.2	-	S121443D	FPS150020	USV	-	LLF / LSM
	0.2	-	S123059D	FPS140020	USV	-	LLF / MiniTip
	0.45	-	S122371D	FPS150045	USV	-	LLF / LSM
	0.45	-	S122338D	FPS140045	USV	-	LLF / MiniTip
	0.2	-	S120349D	FPS150020S	USV	yes	LLF / LSM
	0.45	-	S120350D	FPS150045S	USV	yes	LLF / LSM
	0.2	-	S123056D	FPS140020S	USV	yes	LLF / MiniTip
	0.45	-		FPS140045S	USV	yes	LLF / MiniTip
25	0.2	-	S077915D	FPS250020	USV	-	LLF / LSM
	0.45	-	S077917D	FPS250045	USV	-	LLF / LSM
	0.2	-	S077916D	FPS250020S	USV	yes	LLF / LSM
	0.45	-	S077918D	FPS250045S	USV	yes	LLF / LSM
	0.2	-		FPS250020R	RV	-	LLF / LSM
	0.45	-		FPS250045R	RV	-	LLF / LSM
	0.2	-		FPS250020RS	RV	yes	LLF / LSM
	0.45	-		FPS250045RS	RV	yes	LLF / LSM
	0.2	yes	S120566D	FPS250020RV	RV	-	LLF / LSM
	0.45	yes		FPS250045RV	RV	-	LLF / LSM
	0.2	yes		FPS250020RVS	RV	yes	LLF / LSM
	0.45	yes		FPS250045RVS	RV	yes	LLF / LSM
30	0.2	-	S122019D	FPS300020	USV	-	LLF / LSM
	0.45	-	S120513D	FPS300045	USV	-	LLF / LSM
	0.2	-	S121487D	FPS300020S	USV	yes	LLF / LSM
	0.45	-	S121483D	FPS300045S	USV	yes	LLF / LSM
	0.2	-		FPS300020R	RV	-	LLF / LSM
	0.45	-		FPS300045R	RV	-	LLF / LSM
	0.2	-		FPS300020RS	RV	yes	LLF / LSM
	0.45	-		FPS300045RS	RV	yes	LLF / LSM
	0.2	yes		FPS300020RV	RV	-	LLF / LSM
	0.45	yes		FPS300045RV	RV	-	LLF / LSM
	0.2	yes		FPS300020RVS	RV	yes	LLF / LSM
	0.45	yes		FPS300045RVS	RV	yes	LLF / LSM

USV: Ultrasonic Welded Version. **RV:** Ring Version. **LLF:** Luer-Lock Female. **LSM:** Luer-Slip Male

DIAFIL
FILTRATION DEVICES

DIAFIL - Mixed Cellulose Ester (CM)

The mixed cellulose ester membrane is hydrophilic. It is a mixed ester of the CA and CN membrane material. CM membranes contain a high proportion of cellulose nitrate and can therefore be used for similar tasks.

Diameter (mm)	Pore Size	Pre-Filter	Item Number	Description	Housing	Sterile	Connections inlet / outlet
15	0.2	-	S125871D	FCM150020	USV	-	LLF / LSM
	0.2	-		FCM140020	USV	-	LLF / MiniTip
	0.45	-		FCM150045	USV	-	LLF / LSM
	0.45	-		FCM140045	USV	-	LLF / MiniTip
	0.2	-	S122230D	FCM150020S	USV	yes	LLF / LSM
	0.45	-	S122229D	FCM150045S	USV	yes	LLF / LSM
	0.2	-		FCM140020S	USV	yes	LLF / MiniTip
	0.45	-		FCM140045S	USV	yes	LLF / MiniTip
25	0.2	-	S122688D	FCM250020	USV	-	LLF / LSM
	0.45	-	S120155D	FCM250045	USV	-	LLF / LSM
	0.2	-	S122687D	FCM250020S	USV	yes	LLF / LSM
	0.45	-		FCM250045S	USV	yes	LLF / LSM
	0.2	-		FCM250020R	RV	-	LLF / LSM
	0.45	-	S077033D	FCM250045R	RV	-	LLF / LSM
	0.2	-		FCM250020RS	RV	yes	LLF / LSM
	0.45	-		FCM250045RS	RV	yes	LLF / LSM
	0.2	yes		FCM250020RV	RV	-	LLF / LSM
	0.45	yes		FCM250045RV	RV	-	LLF / LSM
	0.2	yes		FCM250020RVS	RV	yes	LLF / LSM
	0.45	yes		FCM250045RVS	RV	yes	LLF / LSM
30	0.2	-	S077034D	FCM300020	USV	-	LLF / LSM
	0.45	-	S077035D	FCM300045	USV	-	LLF / LSM
	0.2	-	S121015D	FCM300020S	USV	yes	LLF / LSM
	0.45	-	S125653D	FCM300045S	USV	yes	LLF / LSM
	0.2	-		FCM300020R	RV	-	LLF / LSM
	0.45	-		FCM300045R	RV	-	LLF / LSM
	0.2	-		FCM300020RS	RV	yes	LLF / LSM
	0.45	-		FCM300045RS	RV	yes	LLF / LSM
	0.2	yes		FCM300020RV	RV	-	LLF / LSM
	0.45	yes		FCM300045RV	RV	-	LLF / LSM
	0.2	yes		FCM300020RVS	RV	yes	LLF / LSM
	0.45	yes		FCM300045RVS	RV	yes	LLF / LSM

USV: Ultrasonic Welded Version. **RV:** Ring Version. **LLF:** Luer-Lock Female. **LSM:** Luer-Slip Male

Syringe Filter Types

DIAFIL- Cellulose Acetate (CA)

Cellulose Acetate membranes are used in tissue culture media filtration as well as sensitive biological samples. They have low protein absorption and can be used in the clear filtration and sterile filtration of aqueous solutions. High temperature stability.

Diameter (mm)	Pore Size	Pre-Filter	Item Number	Description	Housing	Sterile	Connections inlet / outlet
15	0.2	-	5123280D	FCA150020	USV	-	LLF / LSM
	0.2	-	5123453D	FCA140020	USV	-	LLF / MiniTip
	0.45	-	5077002D	FCA150045	USV	-	LLF / LSM
	0.45	-	5123456D	FCA140045	USV	-	LLF / MiniTip
	0.2	-	5123091D	FCA150020S	USV	yes	LLF / LSM
	0.45	-		FCA150045S	USV	yes	LLF / LSM
	0.2	-		FCA140020S	USV	yes	LLF / MiniTip
	0.45	-		FCA140045S	USV	yes	LLF / MiniTip
25	0.2	-	5077007D	FCA250020	USV	-	LLF / LSM
	0.45	-	5077010D	FCA250045	USV	-	LLF / LSM
	0.2	-	5120518D	FCA250020S	USV	yes	LLF / LSM
	0.45	-	5123031D	FCA250045S	USV	yes	LLF / LSM
	0.2	-	5077008D	FCA250020R	RV	-	LLF / LSM
	0.45	-	5077013D	FCA250045R	RV	-	LLF / LSM
	0.2	-	5077009D	FCA250020RS	RV	yes	LLF / LSM
	0.45	-	5077014D	FCA250045RS	RV	yes	LLF / LSM
	0.2	yes		FCA250020RV	RV	-	LLF / LSM
	0.45	yes	5126244D	FCA250045RV	RV	-	LLF / LSM
	0.2	yes	5120357D	FCA250020RVS	RV	yes	LLF / LSM
	0.45	yes		FCA250045RVS	RV	yes	LLF / LSM
30	0.2	-	5077027D	FCA300020	USV	-	LLF / LSM
	0.45	-	5077028D	FCA300045	USV	-	LLF / LSM
	0.2	-	5122117D	FCA300020S	USV	yes	LLF / LSM
	0.45	-	5120389D	FCA300045S	USV	yes	LLF / LSM
	0.2	-	5121824D	FCA300020R	RV	-	LLF / LSM
	0.45	-		FCA300045R	RV	-	LLF / LSM
	0.2	-		FCA300020RS	RV	yes	LLF / LSM
	0.45	-		FCA300045RS	RV	yes	LLF / LSM
	0.2	yes		FCA300020RV	RV	-	LLF / LSM
	0.45	yes		FCA300045RV	RV	-	LLF / LSM
	0.2	yes		FCA300020RVS	RV	yes	LLF / LSM
	0.45	yes		FCA300045RVS	RV	yes	LLF / LSM

USV: Ultrasonic Welded Version. **RV:** Ring Version. **LLF:** Luer-Lock Female. **LSM:** Luer-Slip Male

DIAFIL
FILTRATION DEVICES

DIAFIL - Glass Fiber (GF)

Glass Fiber membranes are used for preliminary filtration or filtration of media that is difficult to filter. The three dimensional filter surface provides much greater intake capacity for contaminating particles than two-dimensional membranes provide. Glass Fiber is inert to solvents, acids and bases.

Diameter (mm)	Pore Size	Pre-Filter	Item Number	Description	Housing	Sterile	Connections inlet / outlet
15	0.2	-	5077326D	FGF150001	USV	-	LLF / LSM
	0.2	-	5077325D	FGF140001	USV	-	LLF / MiniTip
	0.2	-	5077327D	FGF150001S	USV	yes	LLF / LSM
	0.2	-	5122757D	FGF140001S	USV	yes	LLF / MiniTip
25	0.2	-	5077329D	FGF250001	USV	-	LLF / LSM
	0.2	-	5077331D	FGF250001S	USV	yes	LLF / LSM
	0.2	-	5077332D	FGF250001R	RV	-	LLF / LSM
	0.2	-	5077333D	FGF250001RS	RV	yes	LLF / LSM
30	0.2	-	5077342D	FGF300001	USV	-	LLF / LSM
	0.2	-	5120551D	FGF300001S	USV	yes	LLF / LSM
	0.2	-	5077343D	FGF300001R	USV	-	LLF / LSM
	0.2	-		FGF300001RS	RV	yes	LLF / LSM

USV: Ultrasonic Welded Version. **RV:** Ring Version. **LLF:** Luer-Lock Female. **LSM:** Luer-Slip Male

DIAFIL - Inline Filter 50mm

The 50mm inline filter with it's ultra pure Polypropylene housing (ultrasonic welded) is designed to contain one or multiple 47mm membrane cycles. The filter comes with 6-12mm tube clips (tapered) at the inlet and the outlet side. Depending on the application the filter can be customized with different membrane types.

PTFE Membranes: For venting applications, PS and PA Membranes: For liquid media in different pore sizes. Other membrane types are available upon request.

High filter area of 1735mm² the filter is suitable for long term gas filtration / venting applications or it could be used for filtration of higher volumes of liquid (up to approximately 500ml), depending on the particle load of the filtrated suspension.

Diameter (mm)	Pore Size	Pre-Filter	Item Number	Description	Housing	Sterile	Connections inlet / outlet
47	0.2	-	5126101D	FPTS02020	USV	no	6-12mm tapered tube
	0.2	-	5126825D	FPTS02020S	USV	yes	6-12mm tapered tube
	0.45	-	5127329D	FPTS02045	USV	no	6-12mm tapered tube
	0.45	-	5126833D	FPTS02045S	USV	yes	6-12mm tapered tube

USV: Ultrasonic Welded Version. **RV:** Ring Version. **LLF:** Luer-Lock Female. **LSM:** Luer-Slip Male

DIAFIL
FILTRATION DEVICES

CAPABILITIES & CUSTOM PRODUCTS

Biomedical Innovations offers a variety of customized filter products.

- Special Filter Membranes – e.g.: CN, PET, PP, PC, ACP, PE, stainless steel…
- Non-Standard Pore Sizes - 0,1 – 500 µm
- Customized Color Coded Rings and Imprints
- Custom Connections
- Flow Optimized Filters
- Custom Diameter Ranges - 4-70 mm
- And Much More...

Whatever your custom needs, we provide the right solution!

As a manufacturer of filtration products and writing equipment for measurement technology we are familiar with the development, production, and assembly of plastic products and composite components and are pleased to offer our production expertise to our customers. Our services include:

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kp8@orange.fr
+33 01 45 99 56 70

14 rue des Laboureurs
94440 Marolles-en-Brie
France

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a Graphic Controls company