

OlimPeak®

Certified Filters by Teknokroma



Introduction

Filtering samples prior to injection will prolong column, frits and valves life, and reduce down time due to less instrument maintenance.

The quality of the filtrate from any sample is dependent on a number of variables, such as, the membrane, the membrane support(if used), the resin used to mold the filter housing, and last but not least, the analyst.

In any laboratory filtration where the purity of the filtrate is important, the analyst must remember three very important words, slower is better. Filtration improves when the sample passes through the filter slowly. Attention should be payed when using a high volume syringe (more than 10 ml), in order to avoid the maximum operating pressure.

Integrity of the Membrane

The best method to guarantee the integrity of the membrane is the control of the bubble point.

The bubble point is the minimum pressure required to create a steady flow of bubbles from a fully wetted membrane (water for hydrophilic materials and alcohols for hydrophobics). Microporous membranes in contact with the wetting liquid, fill their pores following principles associated with the capillary forces. To vent the filled pores requires a differential pressure to be applied across them.

Principal factors affecting bubble point test are: surface tension of the liquid, surface free energy of the membrane, size of pores, temperature and wetting procedure.

In a simplified math-form, the required pressure to vent a liquid filled pore **P**, has a inverse relationship to the pore diameter, **d** as described by this bubble point equation:

$$P = \frac{K4\sigma \cos\theta}{d}$$

P: Bubble point pressure

σ: Surface tension of wetting fluid

θ: Contact angle of liquid-solid

K: Pore shape factor constant (since pores are not simple cylinders in the real filter membranes).

d: pore diameter.



Syringe Filter Membrane Compatibility Chart

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

Chemical	PTFE	PTFEH	PES	CA	RC	PP	GMF
ACIDS							
Acetic, Glacial	LC	C	C	IC	C	C	C
Acetic, 25%	C	C	C	CA	C	C	C
Hydrochloric, Concentrated	IC	C	C	IC	IC	C	C
Hydrochloric, 25%	IC	C	C	IC	IC	C	C
Sulfuric, Concentrated	IC	C	IC	IC	IC	C	C
Sulfuric, 25%	IC	C	C	IC	IC	C	LC
Nitric, Concentrated	IC	C	IC	IC	IC	C	LC
Nitric, 25%	IC	C	C	IC	IC	C	LC
Phosphoric, 25%	IC	C	ND	CA	LC	C	C
Formic, 25%	IC	C	ND	LC	C	C	C
Trichloroacetic, 10%	IC	C	ND	CA	C	C	ND
ALCOHOLS							
Methanol, 98%	C	C	C	C	C	C	C
Ethanol, 98%	C	C	C	C	C	C	C
Ethanol, 70%	LC	C	C	C	C	C	C
Isopropanol	C	C	C	C	C	C	C
n-Propanol	C	C	C	C	C	C	C
Amyl Alcohol (Butanol)	C	C	C	C	C	C	C
Benzyl Alcohol	C	C	ND	LC	C	C	IC
Ethylene Glycol	C	C	C	C	C	C	C
Propylene Glycol	C	C	C	LC	C	C	C
Glycerol	C	C	C	C	C	C	C
ALKALIES							
Ammonium Hydroxide, 25%	C	LC	C	C	LC	C	C
Sodium Hydroxide, 3N	C	C	C	IC	LC	C	IC
AMINES AND AMIDES							
Dimethyl Formamide	LC	C	IC	IC	LC	C	C
Diethylacetamide	C	C	ND	IC	C	ND	C
Triethanolamine	C	C	ND	C	C	ND	ND
Aniline	ND	C	ND	IC	C	ND	ND
Pyridine	C	C	IC	IC	C	IC	C
Acetonitrile	C	C	C	LC	IC	C	C
ESTERS							
Ethyl Acetate/Methyl Acetate	C	C	C	IC	IC	C	LC
Amyl Acetate/Butyl Acetate	C	C	IC	LC	C	LC	C
Propyl Acetate	C	C	IC	LC	C	LC	ND
Propylene Glycol Acetate	ND	C	ND	IC	IC	C	C
2-Ethoxyethyl Acetate	ND	C	ND	IC	LC	C	ND
Methyl Cellulosolve	ND	C	ND	IC	IC	C	C
Chemical	PTFE	PTFEH	PES	CA	RC	PP	GMF
Benzyl Benzoate	C	C	ND	IC	C	ND	ND
Isopropyl Myristate	C	C	ND	IC	C	ND	ND
Tricresyl Phosphate	ND	C	ND	IC	C	ND	ND
HALOGENATED HYDROCARBONS							
Methylene Chloride	LC	C	C	IC	IC	LC	C
Chloroform	C	C	C	IC	IC	LC	C
Trichloroethylene	C	C	IC	IC	C	C	C
Chlorobenzene	C	C	C	LC	C	C	C
Freon	C	C	C	LC	C	C	C
Carbon Tetrachloride	C	C	C	IC	LC	LC	C
HYDROCARBONS							
Hexane/Xylene	C	C	C	IC	C	IC	C
Toulene/Benzene	C	C	C	IC	C	IC	C
Kerosene/Casoline	C	C	C	LC	C	IC	C
Tetralin/Decalin	ND	C	C	ND	C	ND	ND
KETONES							
Acetone	C	C	IC	IC	IC	C	C
Cyclohexanone	C	C	IC	IC	IC	C	C
Methyl Ethyl Ketone	C	C	LC	IC	LC	C	C
Isopropylacetone	C	C	IC	IC	C	ND	C
Methyl Isobutyl Ketone	ND	C	LC	IC	ND	C	C
ORGANIC OXIDES							
Ethyl Ether	C	C	C	C	C	LC	ND
Dioxane	C	C	LC	IC	C	C	C
Tetrahydrofuran	C	C	LC	IC	C	C	C
Triethanolamine	C	C	ND	C	C	ND	ND
Dimethylsulfoxide (DMSO)	C	C	IC	IC	C	C	C
Isopropyl Ether	ND	C	C	C	C	C	ND
MISCELLANEOUS							
Phenol, Aqueous Sol., 10%	ND	C	LC	IC	IC	C	C
Formaldehyde, Aqueous Sol. 30%	C	C	C	C	C	C	C
Hydrogen Peroxide, 30%	C	C	ND	ND	C	C	ND
Silicone Oil/Mineral Oil	ND	C	C	C	C	C	C
Legend	PTFE	PTFEH	PES	CA	RC	PP	GMF
C	Compatible						
LC	Limited Compatibility (membrane may swell and shrink)						
IC	Incompatible (not recommended)						
ND	No compatibility data currently available						
	PTFE	PTFEH	PES	CA	RC	PP	GMF
	Polytetrafluoroethylene (Teflon®)						
	PTFEH Hydrophilic Polytetrafluoroethylene (Teflon®)						
	PVDF Polyvinylidene						
	PES Polyethersulfone						
	CA Cellulose Acetate						
	RC Regenerated Cellulose						
	PP Polypropylene						
	GMF Glass MicroFiber						



Membrane Selection

To select the right membrane for sample and solvent filtration for chromatography, there are several important considerations:

- The membrane and housing must be highly solvent resistant, since most chromatography solvents are aggressive and sometimes corrosive.
- It should not have extractables because they can interfere with analytical results.
- It should present a low protein binding for biological samples.
- Size and amount of particulates in the sample
- Special considerations if you need pre-filter
- Special membrane for filtration of inorganic ions

Guidelines to choose your syringe filter

Sample matrix with organic or/and water solvents:

You can use: Nylon, Polypropylene, PVDF, PTFE, Hydrophilic PTFE, Regenerated Cellulose

Sample matrix with aqueous solutions:

You can use:
Cellulose Acetate, M.E. Cellulose, PES, Nitrocellulose

Sample matrix with peptides and proteins:

You can use:
Regenerated Cellulose, Acetate Cellulose, Polypropylene, PVDF, PES

Tissue Culture media Filtration:

You can use:
Regenerated Cellulose, Cellulose Acetate, PES, M.E Cellulose

Ion Chromatography Filtration:

You can use:
Certified Polyethersulfone

Samples matrix with excessive amount of particulates:

You can use: Syringe filter with Glass Prefilter.

General Overview

Filter Housing: High density polypropylene (PP) medical grade:

Excellent chemical compatibility with acids, alcohols, bases, ethers, glycols, ketones and oils.

Limited resistance for acids > 1N, ethers, aromatics and halogenated hydrocarbons

Maximum operating temperature 135 °C

Standard Connections: Female Luer Lock inlet, male Luer slip outlet as a standard in compliance with ISO 594-1

Minitip Connections: Female Luer Lock inlet, male MiniTip outlet

Robotic Connections: Female Luer Lock inlet, male Minispike outlet

Filter type: Non sterile / Sterile

Membranes Selection: PP (Polypropylene), Nylon, PTFE, Hydrophilic PTFE, M.E. Cellulose, Regenerated Cellulose, PVDF, Nitrocellulose, Cellulose Acetate, Polyethersulfone, and Glass Microfiber

Pore size: 0.2 - 0.45 µm for all filters

Pore size: 1, 2 and 5 µm for Glass microfiber

Pore size 0.45 µm: Most of HPLC application.

Pore size 0.20 µm: we use them in 2 cases:

- 1- In order to eliminate all bacterial contamination.
- 2- When we use < 5 µm HPLC column.

Max. Operating pressure: 4 mm D 650 KPa, 13 mm D. 650 KPa, 25 mm D 650 KPa and 50 mm D. 650 KPa.

Retention volumes: 4 mm < 10 µL, 13 mm < 100 µL, 25 mm D. < 150 µL and 50 mm D. <500 µL

Sample Volume Size: 4 mm D. <1 mL, 13 mm D. 1-10 ml, 25 mm D > 10 ml and 50 mm D. >100 mL

Filtration area: 4 mm D. 0.07 cm², 13 mm D. 0.95 cm² and 25 mm D. 3.55 cm² and 50 mm D. 16.33 cm²

For samples with a high amount of particulates it is recommended to use the filters with a glass-fiber pre-filter. This combination eliminates the need for a pre-filtration step.

() For critical applications using UV detection at < 210 nm is recommended to reject the first 0.1 mL filtrated (for 4mmØ), the first 0.3mL filtrated (for 13mmØ), the first 1 mL filtrated (for 25mmØ), and the first 3mL filtrated (for 50mmØ)*

OlimPeak[®]

Certified Filters by Teknokroma

Introduction of the New line of Olimpeak[™] syringe filters

Teknokroma introduces into the market the new range of Certified Syringe Filters **Olimpeak[™]**.

This new line of Olimpeak[™] Certified Filters offers a step further in traceability, method validation and GLP.

Certified Olimpeak[™] syringe filters are made using polypropylene medical grade housing with Luer Lock and Luer slip fittings in compliance with ISO 594-1. Each filter is sealed using an external ring insert to maintain the membrane integrity and best performance. Olimpeak[™] syringe filters are color coded for an easy identification.

All syringe filters are manufactured in compliance with ISO 9001 and technical procedures and tested according international standards of ISO 17025. Our manufacturing methods eliminate variable results through controlled manufacturing consistency batch to batch, and filter to filter. Samples and raw data of all syringe filter batches and membranes are stored during 5 years from production for reference.

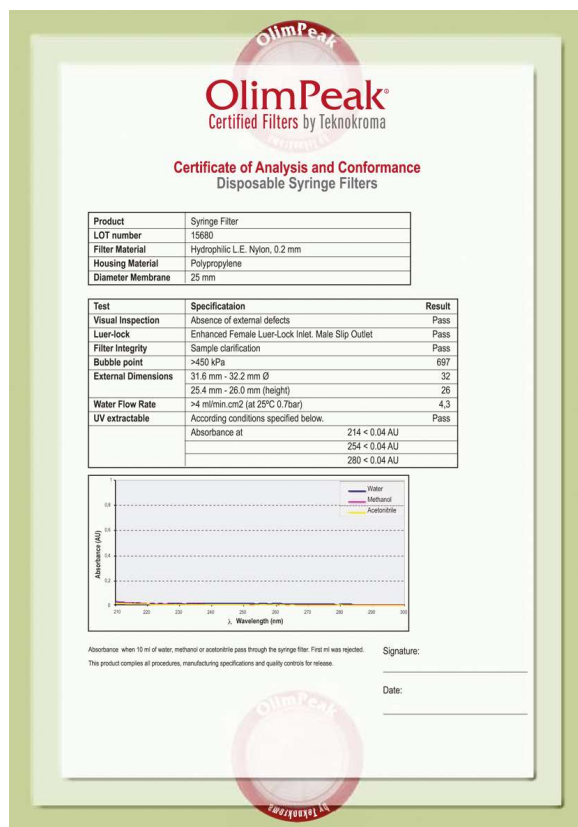
Our new **Certified Syringe Filter Olimpeak[™]** offer the best value. All filters are supplied with a Certificate of Quality batch to batch as guarantee of product performance and quality.

Each lot is quality monitored for:

- 100 % of the syringe filters are visually inspected following quality specifications
- Each batch of filters is tested for external dimensions
- Bubble Point
- Burst Pressure
- Filter Integrity
- Water Flow Rate
- UV Extractables and compliance with all technical procedures.
- Manufacturing specifications and quality controls for release

Test are carried out by an independent laboratory

() For critical applications using chromatography detection at < 210 nm it is recommended to reject the first filtrate ml.*



Olimpeak[™] Certificate

Teknokroma's Syringes filters are of high quality and their level of extractables is very low. The encapsulating process forces the sample to pass only through the membrane .

They chemically resist a wide range of chemical products and solvents.

Teknokroma's filters avoid any leak or any contamination due to the use of high quality materials.

Easy Identification for Method Validation



In addition to the color code, every single unit of Olimpeak[™] Certified Syringe Filter is printed with the membrane type, pore size and batch number. This information makes them uniques for traceability, GLP's and validation purposes.

Nylon Olimpeak™ Certified Syringe Filter with Polypropylene Housing



- Hydrophilic membrane.
- Excellent for HPLC samples, can be used for general filtration.
- Nylon is compatible with organic or aqueous solutions
- High bubble point.
- Nylon has high protein retention.
- Maximum operating temperature 100 °C
- Nylon Low Extractables

Don't use with strong acids, or bases, halogenated hydrocarbons, and protein.

Reference	Description	Pk
TR-200100	Nylon Filter, green 0.45 µm, 25 mm D	100
TR-200101	Nylon Filter, light green 0.20 µm, 25 mm D	100
TR-200500	Nylon Filter, green 0.45 µm, 13 mm D	100
TR-200501	Nylon Filter, light green 0.20 µm, 13 mm D	100
*	4mm Filters available at pg 160	
**	Sterile Filters available at pg: 161	

PTFE Certified Olimpeak™ Syringe Filter with Polypropylene Housing



- The PTFE (polytetrafluoroethylene) is a hydrophobic membrane resistant to strong acids, aggressive solvents, alcohols, bases and aromatics.
- This membrane is ideal for filtration and degassing of chromatography solvents and also for extremely basic

mobile phase solutions

- Very low extractables
- This membrane is mechanically strong
- For sterile venting use 0.2 µm pore size, and for trasducer protection or air/gas filtration use 1 or 0.45 µm.
- Excellent thermal stability
- Aqueous solutions require pre-wetting with an alcohol
- Maximum operating temperature 100 °C

Reference	Description	Pk
TR-200102	PTFE Filter, blue , 0.45 µm, 25 mm D	100
TR-200103	PTFE Filter, light blue, 0.20 µm, 25 mm D	100
TR-200502	PTFE Filter, blue , 0.45 µm, 13 mm D	100
TR-200503	PTFE Filter, light blue , 0.20 µm, 13 mm D	100
*	4mm Filters available at pg 160	
**	Sterile Filters available at pg: 161	

Hydrophilic PTFE Certified Olimpeak™ Syringe Filter with Polypropylene Housing



The PTFE (polytetrafluoroethylene) is a hydrophilic membrane resistant to strong acids, aggressive solvents, alcohols, bases and aromatics.

- This membrane is ideal for filtration and degassing of chromatography solvents and also for extremely basic mobile phase solutions
- Very low extractables
- This membrane is mechanically strong
- For sterile venting use 0.2 µm pore size, and for trasducer protection or air/gas filtration use 1 or 0.45 µm.
- Excellent thermal stability
- Aqueous solutions can be directly filtrated
- Maximum operating temperature 100 °C
- Alternative to PP membrane filters

Reference	Description	Pk
TR-200102H	PTFE H Filter, blue , 0.45 µm, 25 mm D	100
TR-200103H	PTFE H Filter, light blue, 0.20 µm, 25 mm D	100
TR-200502H	PTFE H Filter, blue , 0.45 µm, 13 mm D	100
TR-200503H	PTFE H Filter, light blue , 0.20 µm, 13 mm D	100
*	4mm Filters available at pg 160	
**	Sterile Filters available at pg: 161	

Polypropylene Certified Olimpeak™ Syringe Filter with Polypropylene Housing



- Polypropylene is a hydrophilic membrane, highly resistant to solvents
- Exhibits a wide range of chemical compatibility to organic solvents
- It is ideal for biological sample filtration due to the low protein binding
- Good choice for chromatography protein analysis and biological sample filtration
- Can be used with acids and bases, and general HPLC analysis
- Maximum operating temperature 110 °C
- Limited resistance to chloroform and MeCl

Reference	Description	Pk
TR-200111	Polypropylene Filter, white 0.45 µm, 25 mm D	100
TR-200112	Polypropylene Filter, natural , 0.20 µm, 25 mm D	100
TR-200509	Polypropylene Filter, white , 0.45 µm, 13 mm D	100
TR-200508	Polypropylene Filter, natural , 0.20 µm, 13 mm D	100
*	4mm Filters available at pg 160	
**	Sterile Filters available at pg: 161	

PVDF Certified Olimpeak™ Syringe Filter with Polypropylene Housing



- PVDF is Polyvinylidene difluoride and is a hydrophilic membrane
- This membrane is solvent resistant and exhibits low levels of extractables
- PVDF is a low protein binding membrane, and can be used with proteins and peptides

- Can be used for sample filtration of aqueous and organic solvents
 - Ideal for all the applications for HPLC and general biological filtration
 - Maximum operating temperature 110 °C
- Don't use it with strong acids, bases or ketones.

Reference	Description	Pk
TR-200106	PVDF Filter, red 0.45 µm, 25 mm D	100
TR-200107	PVDF Filter, rose 0.20 µm, 25 mm D	100
TR-200506	PVDF Filter, red 0.45 µm, 13 mm D	100
TR-200507	PVDF Filter, rose, 0.20 µm, 13 mm D	100
*	4mm Filters available at pg 160	
**	Sterile Filters available at pg: 161	

Regenerated Cellulose Certified Olimpeak™ Syringe Filter with Polypropylene Housing



- Regenerated Cellulose, is a hydrophilic solvent resistant and very low protein binding membrane
- It is also compatible with nearly all common HPLC solvents
- The Regenerated Cellulose is compatible with aqueous samples in a pH from 3 to 12
- These membranes, can be used for biological samples filtration and are important for the protein recuperation
- The Regenerated Cellulose is the membrane of choice for low nonspecific binding applications, tissue culture media filtration and biological sample filtration. To improve the filtration use it with Glass pre-filter membrane
- Maximum operating temperature 110 °C

Don't use with strong acids, chloroform, THF.

Reference	Description	Pk
TR-200445	Regenerated Cellulose Filter, brown, 0.45 µm, 25 mm D	100
TR-200440	Regenerated Cellulose Filter, light brown, 0.20 µm, 25 mm D	100
TR-200435	Regenerated Cellulose Filter, brown 0.45 µm, 13 mm D	100
TR-200430	Regenerated Cellulose Filter, light brown, 0.20 µm, 13 mm D	100
*	4mm Filters available at pg 160	
**	Sterile Filters available at pg: 161	

Polyethersulfone Certified Olimpeak™ Syringe Filter with Polypropylene Housing



- Hydrophilic membrane, very low protein and nucleotic acid binding and can be used with high temperature liquids
- This membrane provides high flow rates and good throughput volume
- PES is the filter of choice for tissue culture work, having very low extractables
- The PES is a mechanically strong membrane, and can be used with strong bases, alcohols and resistive proteins
- Good to excellent flow rates
- Maximum operating temperature 100 °C

Don't use it with acids, ketones, ethers, halogenated or aromatic hydrocarbons.

Reference	Description	Pk
TR-200401	Polyethersulfone, violet 0,45 µm, 25 mm D	100
TR-200402	Polyethersulfone, light violet 0,20 µm, 25 mm D	100
TR-200403	Polyethersulfone, violet 0,45 µm, 13 mm D	100
TR-200404	Polyethersulfone, light violet 0,20 µm, 13 mm D	100
*	4mm Filters available at pg 160	
**	Sterile Filters available at pg: 161	

Cellulose Acetate Certified Olimpeak™ Syringe Filter with Polypropylene Housing



- Hydrophilic membrane
- Ideal for aqueous based samples and for tissue cultura media filtration and sensitive biological simples
- Very low protein binding membrane, even less than either PVDF or PES membranes
- This membrane has a lower chemical resistance than Regenerated Cellulose
- Maximum operating temperature 110 °C

Don't use it with organic solvents.

Reference	Description	Pk
TR-200406	Cellulose Acetate, orange 0.45 µm, 25 mm D	100
TR-200407	Cellulose Acetate, light orange 0.20 µm, 25 mm D	100
TR-200408	Cellulose Acetate, orange 0.45 µm, 13 mm D	100
TR-200409	Cellulose Acetate, light orange 0.20 µm, 13 mm D	100
*	4mm Filters available at pg 160	
**	Sterile Filters available at pg: 161	

M.E. Cellulose Certified Olimpeak™ Syringe Filter with Polypropylene Housing



- The M.E Cellulose membrane is hydrophilic
- They are used to clean or to sterilize many aqueous solutions
- It is ideal for biological samples or culture media filtration

Reference	Description	Pk
TR-200104	M.E Cellulose Filter, yellow, 0.45 µm, 25 mm D	100
TR-200105	M.E Cellulose Filter, light yellow, 0.20 µm, 25 mm D	100
TR-200504	M.E Cellulose Filter, yellow, 0.45 µm, 13 mm D	100
TR-200505	M.E Cellulose Filter, light yellow, 0.20 µm, 13 mm D	100
*	4mm Filters available at pg 160	
**	Sterile Filters available at pg: 161	

Glass Microfibre GMF Certified Olimpeak™ Syringe Filter with Polypropylene Housing



- GMF membranes are commonly used as pre-filters to remove large particulates to extend the loading capacity of the filter membrane
- Membrane of choice for dissolution test
- Maximum operating temperature 110 °C

Reference	Description	Pk
TR-200000G	Glass Microfiber GMF, Grey, 1,0 µm 25 mm D	100
TR-200006G	Glass Microfiber GMF, Grey, 2,0 µm 25 mm D	100
TR-200007G	Glass Microfiber GMF, Grey, 5,0 µm 25 mm D	100
TR-200003G	Glass Microfiber GMF, Grey, 1,0 µm 13 mm D	100
TR-200008G	Glass Microfiber GMF, Grey, 2,0 µm 13 mm D	100
TR-200009G	Glass Microfiber GMF, Grey, 5,0 µm 13 mm D	100
*	4mm Filters available at pg 160	
**	Sterile Filters available at pg: 161	



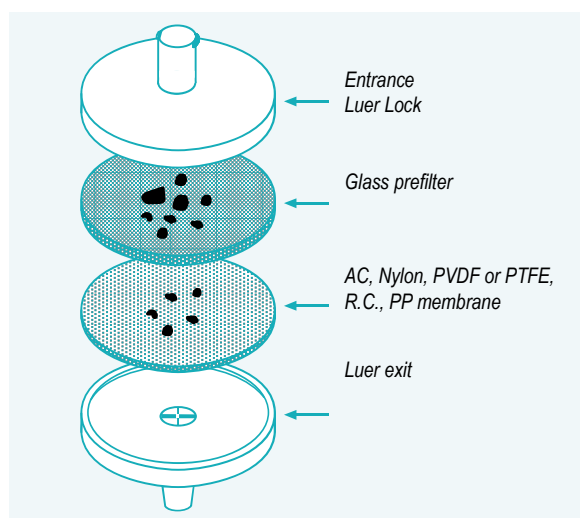
MiniTip Certified Olimpeak™ Syringe Filters



- Teknokroma has designed a new 13 mm syringe filter with a thin outlet called MiniTip, for direct filling of microvials.
- High quality MiniTip syringe filters are available with these membranes: Nylon, PES, PTFE, PVDF, RC, CN, CA, M.E.C and PP.
- Pore size can be 0.45 or 0.20 µm and the lot number of each filter is printed on the PP housing.

Reference	Description	Pk
TR-200500MT5	Mini Tip Nylon 0.45 µm x 13 mm PP, Green	500
TR-200501MT5	Mini Tip Nylon 0.2 µm x 13 mm PP, Light Green	500
TR-200502MT5	Mini Tip PTFE 0.45 µm x 13 mm PP, Blue	500
TR-200503MT5	Mini Tip PTFE 0.2 µm x 13 mm PP, Light Blue	500
TR-200502MT5H	Mini Tip PTFE H.*0.45 µm x 13 mm PP, Blue	500
TR-200503MT5H	Mini Tip PTFE H.*0.2 µm x 13 mm PP, Light Blue	500
TR-200504MT5	Mini Tip M.E.Cellulose 0.45 µm x 13 mm PP, Yellow	500
TR-200505MT5	Mini Tip M.E.Cellulose 0.2 µm x 13 mm PP, Light Yellow	500
TR-200506MT5	Mini Tip PVDF 0.45 µm x 13 mm PP, Red	500
TR-200507MT5	Mini Tip PVDF 0.2 µm x 13 mm PP, Light Red	500
TR-200508MT5	Mini Tip Polypropylene 0.2 µm x 13 mm PP, White	500
TR-200509MT5	Mini Tip Polypropylene 0.45 µm x 13 mm PP, White	500
TR-200430MT5	Mini Tip Regenerated Cellulose 0.2 µm x 13 mm PP, Light Brown	500
TR-200435MT5	Mini Tip Regenerated Cellulose 0.45 µm x 13 mm PP, Brown	500
TR-200408MT5	Mini Tip Cellulose Acetate 0.45 µm x 13 mm.D, Orange	500
TR-200409MT5	Mini Tip Cellulose Acetate 0.2 µm x 13 mm.D, Light Orange	500
TR-200403MT5	Mini Tip Polyethersulfone 0.45 µm x 13 mm.D, Violet	500
TR-200404MT5	Mini Tip Polyethersulfone 0.2 µm x 13 mm.D, Light Violet	500
TR-200500GMT5	Mini Tip GMF 1.0 µm x 13 mm, Grey	500
TR-200506GMT5	Mini Tip GMF 2.0 µm x 13 mm, Grey	500
TR-200507GMT5	Mini Tip GMF 5.0 µm x 13 mm, Grey	500
*	Hydrophilic	
**	Sterile Filters available at pg: 161	

Filter with Glass prefilter Certified Olimpeak™ Syringe and Polypropylene Housing



- Teknokroma offers a wide range of syringe filters with a Glass Microfiber membrane used as pre-filter.
- The Glass pre-filter is mounted before the microporous filter membrane. This combination eliminates the need for a pre-filtration step, minimizes sample loss, and prolongs the life of membrane.
- Flow rates are increased and filtrate volume is significantly greater when compared to filters with no pre-filter.
- Regenerated Cellulose membrane with the GMF membrane as a prefilter, is especially useful for tissue culture media filtration, as well as for general biological sample filtration.
- These filters are ideal for general laboratory filtration of samples that contain an excessive amount of particulates.
- The glass pre-filter removes the larger particulates and prevents premature clogging of the filter membrane.

Reference	Pore	Description	Housing Pk
TR-200100G	0.45 µm	Nylon/Glass fibre 1 µm, 25mm	PP 100
TR-200101G	0.2 µm	Nylon/Glass fibre 1 µm, 25mm	PP 100
TR-200102G	0.45 µm	PTFE/Glass fibre 1 µm, 25mm	PP 100
TR-200103G	0.2 µm	PTFE/Glass fibre 1 µm, 25mm	PP 100
TR-200102GH	0.45 µm	PTFE H/Glass fibre 1 µm, 25mm	PP 100
TR-200103GH	0.2 µm	PTFE H/Glass fibre 1 µm, 25mm	PP 100
TR-200111G	0.45 µm	PP/Glass fibre 1 µm, 25mm	PP 100
TR-200112G	0.2 µm	PP/Glass fibre 1 µm, 25mm	PP 100
TR-200445G	0.45 µm	RC/Glass fibre 1 µm, 25mm	PP 100
TR-200440G	0.2 µm	RC/Glass fibre 1 µm, 25mm	PP 100
TR-200104G	0.45 µm	M.E.C/Glass fibre 1 µm, 25mm	PP 100
TR-200105G	0.2 µm	M.E.C/Glass fibre 1 µm, 25mm	PP 100
TR-200106G	0.45 µm	PVDF/Glass fibre 1 µm, 25mm	PP 100
TR-200107G	0.2 µm	PVDF/Glass fibre 1 µm, 25mm	PP 100
TR-200406G	0.45 µm	CA/Glass fibre 1 µm, 25mm	PP 100
TR-200407G	0.20 µm	CA/Glass fibre 1 µm, 25mm	PP 100
TR-200401G	0.45 µm	PES/Glass fibre 1 µm, 25mm	PP 100
TR-200402G	0.20 µm	PES/Glass fibre 1 µm, 25mm	PP 100

Reference	Pore	Description	Housing Pk
TR-200500G	0.45 µm	Nylon/Glass fibre 1 µm, 13mm	PP 100
TR-200501G	0.2 µm	Nylon/Glass fibre 1 µm, 13mm	PP 100
TR-200502G	0.45 µm	PTFE/Glass fibre 1 µm, 13mm	PP 100
TR-200503G	0.2 µm	PTFE/Glass fibre 1 µm, 13mm	PP 100
TR-200502HG	0.45 µm	PTFE H/Glass fibre 1 µm, 13mm	PP 100
TR-200503HG	0.2 µm	PTFE H/Glass fibre 1 µm, 13mm	PP 100
TR-200509G	0.45 µm	PP/Glass fibre 1 µm, 13mm	PP 100
TR-200508G	0.2 µm	PP/Glass fibre 1 µm, 13mm	PP 100
TR-200435G	0.45 µm	RC/Glass fibre 1 µm, 13mm	PP 100
TR-200430G	0.2 µm	RC/Glass fibre 1 µm, 13mm	PP 100
TR-200504G	0.45 µm	M.E.C/Glass fibre 1 µm, 13mm	PP 100
TR-200505G	0.2 µm	M.E.C/Glass fibre 1 µm, 13mm	PP 100
TR-200506G	0.45 µm	PVDF/Glass fibre 1 µm, 13mm	PP 100
TR-200507G	0.2 µm	PVDF/Glass fibre 1 µm, 13mm	PP 100
TR-200408G	0.45 µm	CA/Glass fibre 1 µm, 13mm	PP 100
TR-200409G	0.20 µm	CA/Glass fibre 1 µm, 13mm	PP 100
TR-200403G	0.45 µm	PES/Glass fibre 1 µm, 13mm	PP 100
TR-200404G	0.20 µm	PES/Glass fibre 1 µm, 13mm	PP 100

** Sterile Filters available at pg: 161

*4 mm Certified Olimpeak™ Syringe Filters



- Ideal for sample volumes < 2 ml
- Available in 10 different membranes
- Dead volume < 10 µL
- Double connection: Luer + Mini Tip
- Certified for low level extractables

Order Information

Reference	Description	Pore	Pk
TR-200610	Cellulose Esters filters, 4 mm	0.20 µm	100
TR-200615	Cellulose Esters filters, 4 mm	0.45 µm	100
TR-200620	PVDF filters, 4 mm	0.20 µm	100
TR-200625	PVDF filters, 4 mm	0.45 µm	100
TR-200630	Nylon filters, 4 mm	0.20 µm	100
TR-200635	Nylon filters, 4 mm	0.45 µm	100
TR-200640	PTFE filters, 4 mm	0.20 µm	100
TR-200645	PTFE filters, 4 mm	0.45 µm	100
TR-200640H	PTFE Hydrophilic filters, 4 mm	0.20 µm	100
TR-200645H	PTFE Hydrophilic filters, 4 mm	0.45 µm	100
TR-200650	PP filters, 4 mm	0.20 µm	100
TR-200655	PP filters, 4 mm	0.45 µm	100
TR-200660	Regenerated Cellulose, 4 mm	0.20 µm	100
TR-200665	Regenerated Cellulose, 4 mm	0.45 µm	100

Reference	Description	Pore	Pk
TR-200670	Cellulose Acetate filters, 4 mm	0.20 µm	100
TR-200675	Cellulose Acetate filters, 4 mm	0.45 µm	100
TR-200680	PES (polyethersulfone), 4 mm	0.20 µm	100
TR-200685	PES (polyethersulfone), 4 mm	0.45 µm	100
TR-200691	Glass Microfiber GMF, 4 mm	1.00 µm	100
TR-200692	Glass Microfiber GMF, 4 mm	2.00 µm	100
TR-200695	Glass Microfiber GMF, 4 mm	5.00 µm	100

** Sterile Filters available at following section

** Sterile Syringe Filter

- Teknokroma offers a wide range of Sterile syringe filters
- Ideal for :
 - medical applications
 - biotech applications
 - microbiological applications
- Each filter is packed individually to guarantee a proper sterilization
- An indicator shows the filter its sterilized
- Each filter is sterilized with etilene oxide



“to order a sterile filter it's as simple as choose any configuration you want and add an “E” at the end of the P/N, like the below example.”

TR-200640E Sterile PTFE filters 4 mm

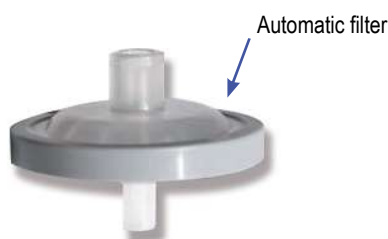
On-Line 50 mm Certified Olimpeak™ Filter for Gas/Liquid Applications



Reference	Membrane	Pore	Housing	Pk
TR-200808	Cellulose Esters filters, 50 mm	0.20 µm		10
TR-200810	Cellulose Esters filters, 50 mm	0.45 µm		10
TR-200812	PVDF filters, 50 mm	0.20 µm		10
TR-200814	PVDF filters, 50 mm	0.45 µm		10
TR-200800	Nylon filters, 50 mm	0.20 µm		10
TR-200802	Nylon filters, 50 mm	0.45 µm		10
TR-200804	PTFE filters, 50 mm	0.20 µm		10
TR-200806	PTFE filters, 50 mm	0.45 µm		10
TR-200804H	PTFE Hydrophilic filters, 50 mm	0.20 µm		10
TR-200806H	PTFE Hydrophilic filters, 50 mm	0.45 µm		10
TR-200816	PP filters, 50 mm	0.20 µm		10
TR-200818	PP filters, 50 mm	0.45 µm		10
TR-200820	Regenerated Cellulose, 50 mm	0.20 µm		10
TR-200822	Regenerated Cellulose, 50 mm	0.45 µm		10
TR-800824	Cellulose Acetate filters, 50 mm	0.20 µm		10
TR-200826	Cellulose Acetate filters, 50 mm	0.45 µm		10
TR-200828	PES (polyethersulfone), 50 mm	0.20 µm		10
TR-200830	PES (polyethersulfone), 50 mm	0.45 µm		10
TR-200840	Glass fibre, 50 mm 1 µm			10
TR-200842	Glass fibre, 50 mm 2 µm			10
TR-200844	Glass fibre, 50 mm 5 µm			10

** Sterile Filters available at previous section

Certified AUTOMATIC OlimPeak Filter for Sotax Filter Stations



- This filter units are the newest development of Teknokroma filter for automatic equipments.
- The design of this filter is the same than the Robotic Filter except that the upper side is vault shaped.
- The inlet is a female luer Screw ant the outlet is a male luer Minispike.

Certified Olimpeak™ Filters for Automatic Equipments

Reference	Membrane	Pore	Housing	Pk
TR-200000A	Fiber Glass	1,00 µm	PP	1000
TR-200006A	Fiber Glass	2,00 µm	PP	1000
TR-200007A	Fiber Glass	5,00 µm	PP	1000
TR-200100A	Nylon	0,45 µm	PP	1000
TR-200101A	Nylon	0,20 µm	PP	1000
TR-200102A	PTFE	0,45 µm	PP	1000
TR-200103A	PTFE	0,20 µm	PP	1000
TR-200102AH	PTFE Hydrophilic	0,45 µm	PP	1000
TR-200103AH	PTFE Hydrophilic	0,20 µm	PP	1000
TR-200104A	M.E.Cellulose	0,45 µm	PP	1000
TR-200105A	M.E.Cellulose	0,20 µm	PP	1000
TR-200106A	PVDF	0,45 µm	PP	1000
TR-200107A	PVDF	0,20 µm	PP	1000
TR-200111A	Polypropylene	0,45 µm	PP	1000
TR-200112A	Polypropylene	0,20 µm	PP	1000
TR-200445A	Regenerated Cellulose	0,45 µm	PP	1000
TR-200440A	Regenerated Cellulose	0,20 µm	PP	1000
TR-200406A	Cellulose Acetate	0,45 µm	PP	1000
TR-200407A	Cellulose Acetate	0,20 µm	PP	1000
TR-200401A	Polyethersulfone	0,45 µm	PP	1000
TR-200402A	Polyethersulfone	0,20 µm	PP	1000
TR-200100GA	Nylon/Glass fibre 1 µm	0,45 µm	PP	1000
TR-200102GA	PTFE/Glass fibre 1 µm	0,45 µm	PP	1000
TR-200103GA	PTFE/Glass fibre 1 µm	0,20 µm	PP	1000
TR-200102GAH	PTFE H/Glass fibre 1 µm	0,45 µm	PP	1000
TR-200103GAH	PTFE H/Glass fibre 1 µm	0,20 µm	PP	1000
TR-200111GA	PP/Glass fibre 1 µm	0,45 µm	PP	1000
TR-200112GA	PP/Glass fibre 1 µm	0,20 µm	PP	1000
TR-200445GARC	Glass fibre 1 µm	0,45 µm	PP	1000
TR-200440GARC	Glass fibre 1 µm	0,20 µm	PP	1000
TR-200104GAM	E.C/Glass fibre 1 µm	0,45 µm	PP	1000
TR-200105GAM	E.C/Glass fibre 1 µm	0,20 µm	PP	1000
TR-200106GAP	PVDF/Glass fibre 1 µm	0,45 µm	PP	1000
TR-200107GAP	PVDF/Glass fibre 1 µm	0,20 µm	PP	1000

TR-200406GA	CA/Glass fibre 1 µm	0,45 µm	PP	1000
TR-200407GA	CA/Glass fibre 1 µm	0,20 µm	PP	1000
TR-200401GA	PES/Glass fibre 1 µm	0,45 µm	PP	1000
TR-200402GA	PES/Glass fibre 1 µm	0,20 µm	PP	1000



Filter Station Sotax

