

## 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 paid 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 an 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.



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Años  
1989-2024

## 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                        | Nylon        | PTFE        | PVDF        | PES        | CA        | RC        | PP        | GMF        |
|---------------------------------|--------------|-------------|-------------|------------|-----------|-----------|-----------|------------|
| <b>ACIDS</b>                    |              |             |             |            |           |           |           |            |
| Acetic, Glacial                 | LC           | C           | C           | C          | IC        | C         | C         | C          |
| Acetic, 25%                     | C            | C           | C           | C          | CA        | C         | C         | C          |
| Hydrochloric, Concentrated      | IC           | C           | C           | C          | IC        | IC        | C         | C          |
| Hydrochloric, 25%               | IC           | C           | C           | C          | IC        | IC        | C         | C          |
| Sulfuric, Concentrated          | IC           | C           | IC          | IC         | IC        | IC        | C         | C          |
| Sulfuric, 25%                   | IC           | C           | C           | C          | IC        | IC        | C         | LC         |
| Nitric, Concentrated            | IC           | C           | C           | IC         | IC        | IC        | C         | LC         |
| Nitric, 25%                     | IC           | C           | C           | C          | IC        | IC        | C         | LC         |
| Phosphoric, 25%                 | IC           | C           | C           | ND         | CA        | LC        | C         | C          |
| Formic, 25%                     | IC           | C           | ND          | ND         | LC        | C         | C         | C          |
| Trichloroacetic, 10%            | IC           | C           | ND          | ND         | CA        | C         | C         | ND         |
| <b>ALCOHOLS</b>                 |              |             |             |            |           |           |           |            |
| Methanol, 98%                   | C            | C           | C           | C          | C         | C         | C         | C          |
| Ethanol, 98%                    | C            | C           | C           | C          | C         | C         | C         | C          |
| Ethanol, 70%                    | LC           | C           | C           | C          | C         | C         | C         | C          |
| Isopropanol                     | C            | C           | C           | C          | C         | C         | C         | C          |
| n-Propanol                      | C            | C           | C           | C          | C         | C         | C         | C          |
| Amyl Alcohol (Butanol)          | C            | C           | C           | C          | C         | C         | C         | C          |
| Benzyl Alcohol                  | C            | C           | C           | ND         | LC        | C         | C         | IC         |
| Ethylene Glycol                 | C            | C           | C           | C          | C         | C         | C         | C          |
| Propylene Glycol                | C            | C           | C           | C          | LC        | C         | C         | C          |
| Glycerol                        | C            | C           | C           | C          | C         | C         | C         | C          |
| <b>ALKALIES</b>                 |              |             |             |            |           |           |           |            |
| Ammonium Hydroxide, 25%         | C            | C           | LC          | C          | C         | LC        | C         | C          |
| Sodium Hydroxide, 3N            | C            | C           | C           | C          | IC        | LC        | C         | IC         |
| <b>AMINES AND AMIDES</b>        |              |             |             |            |           |           |           |            |
| Dimethyl Formamide              | LC           | C           | IC          | IC         | IC        | LC        | C         | C          |
| Diethylacetamide                | C            | C           | ND          | ND         | IC        | C         | ND        | C          |
| Triethanolamine                 | C            | C           | ND          | ND         | C         | C         | ND        | ND         |
| Aniline                         | ND           | C           | ND          | ND         | IC        | C         | ND        | ND         |
| Pyridine                        | C            | C           | IC          | IC         | IC        | C         | IC        | C          |
| Acetonitrile                    | C            | C           | C           | LC         | IC        | C         | C         | C          |
| <b>ESTERS</b>                   |              |             |             |            |           |           |           |            |
| Ethyl Acetate/Methyl Acetate    | C            | C           | C           | IC         | IC        | C         | LC        | C          |
| Amyl Acetate/Butyl Acetate      | C            | C           | IC          | IC         | LC        | C         | LC        | C          |
| Propyl Acetate                  | C            | C           | IC          | IC         | LC        | C         | LC        | ND         |
| Propylene Glycol Acetate        | ND           | C           | ND          | IC         | IC        | C         | C         | ND         |
| 2-Ethoxyethyl Acetate           | ND           | C           | ND          | IC         | LC        | C         | ND        | ND         |
| Methyl Cellulosolve             | ND           | C           | ND          | IC         | IC        | C         | C         | C          |
| <b>Chemical</b>                 | <b>Nylon</b> | <b>PTFE</b> | <b>PVDF</b> | <b>PES</b> | <b>CA</b> | <b>RC</b> | <b>PP</b> | <b>GMF</b> |
| Benzyl Benzoate                 | C            | C           | ND          | IC         | C         | C         | ND        | ND         |
| Isopropyl Myristate             | C            | C           | ND          | IC         | C         | C         | ND        | ND         |
| Tricresyl Phosphate             | ND           | C           | ND          | IC         | C         | C         | ND        | ND         |
| <b>HALOGENATED HYDROCARBONS</b> |              |             |             |            |           |           |           |            |
| Methylene Chloride              | LC           | C           | C           | IC         | IC        | C         | LC        | C          |
| Chloroform                      | C            | C           | C           | IC         | IC        | C         | LC        | C          |
| Trichloroethylene               | C            | C           | C           | IC         | C         | C         | C         | C          |
| Chlorobenzene                   | C            | C           | C           | LC         | C         | C         | C         | C          |
| Freon                           | C            | C           | C           | LC         | C         | C         | C         | C          |
| Carbon Tetrachloride            | C            | C           | C           | IC         | LC        | C         | LC        | C          |
| <b>HYDROCARBONS</b>             |              |             |             |            |           |           |           |            |
| Hexane/Xylene                   | C            | C           | C           | IC         | C         | C         | IC        | C          |
| Toulene/Benzene                 | C            | C           | C           | IC         | C         | C         | IC        | C          |
| Kerosene/Gasoline               | C            | C           | C           | LC         | C         | C         | IC        | C          |
| Tetralin/Decalin                | ND           | C           | C           | ND         | C         | C         | ND        | ND         |
| <b>KETONES</b>                  |              |             |             |            |           |           |           |            |
| Acetone                         | C            | C           | IC          | IC         | IC        | C         | C         | C          |
| Cyclohexanone                   | C            | C           | IC          | IC         | IC        | C         | C         | C          |
| Methyl Ethyl Ketone             | C            | C           | LC          | IC         | LC        | C         | LC        | C          |
| Isopropylacetone                | C            | C           | IC          | IC         | C         | C         | ND        | C          |
| Methyl Isobutyl Ketone          | ND           | C           | LC          | IC         | ND        | C         | LC        | C          |
| <b>ORGANIC OXIDES</b>           |              |             |             |            |           |           |           |            |
| Ethyl Ether                     | C            | C           | C           | C          | C         | LC        | LC        | ND         |
| Dioxane                         | C            | C           | LC          | IC         | C         | C         | C         | C          |
| Tetrahydrofuran                 | C            | C           | LC          | IC         | C         | C         | C         | C          |
| Triethanolamine                 | C            | C           | ND          | C          | C         | ND        | ND        | ND         |
| Dimethylsulfoxide (DSMO)        | C            | C           | IC          | IC         | C         | C         | C         | C          |
| Isopropyl Ether                 | ND           | C           | C           | C          | C         | C         | C         | ND         |
| <b>MISCELLANEOUS</b>            |              |             |             |            |           |           |           |            |
| Phenol, Aqueous Sol., 10%       | ND           | C           | LC          | IC         | IC        | IC        | C         | C          |
| Formaldehyde, Aqueous Sol. 30%  | C            | C           | C           | C          | C         | LC        | C         | C          |
| Hydrogen Peroxide, 30%          | C            | C           | ND          | ND         | C         | C         | ND        | ND         |
| Silicone Oil/Mineral Oil        | ND           | C           | C           | C          | C         | C         | C         | C          |

**Legend**

**C** Compatible

**LC** Limited Compatibility (membrane may swell and shrink)

**IC** Incompatible (not recommended)

**ND** No compatibility data currently available

**PTFE** Polytetrafluoroethylene (Teflon®)

**PVDF** Polyvinylidene Fluoride

**PES** Polyethersulfone

**CA** Cellulose Acetate

**RC** Regenerated Cellulose

**PP** Polypropylene

**GMF** Glass MicroFiber

# Tk Certified Olimpeak™ Syringe Filters



## 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, 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

**Membranes Selection:** PP (Polypropylene), Nylon, Nylon Low Extractables, 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 3 µm HPLC column.

**Max. Operating pressure:** 13 mm D. 750 Kpa and 25 mm D. 550 Kpa

**Retention volumes:** 13 mm < 30 µl and 25 mm D. < 120 µl

**Max. Filtration volume:** 13 mm D. 1-10 ml and 25 mm D. > 10 ml

**Filtration area:** 13 mm D. 0.95 cm<sup>2</sup> and 25 mm D. 3.55 cm<sup>2</sup>

*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.*



## 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.

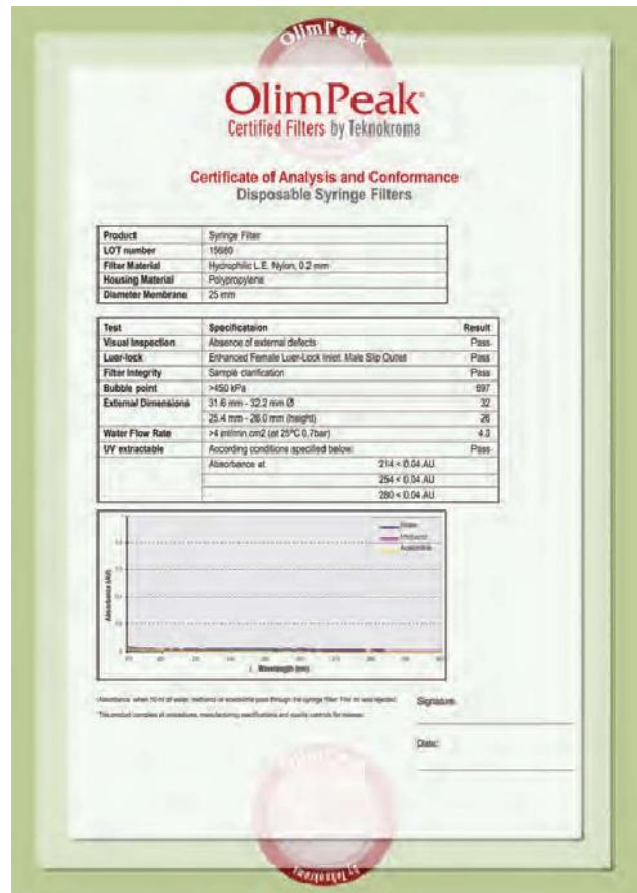
Our new **Certified Syringe Filter Olimpeak™** offer the best value. All filters are supplied with a Certificate of Quality batch to batch as guarantee of product performance and quality.

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 unique for traceability, GLP's and validation purposes.

# Tk Certified Olimpeak™ Syringe Filters

## Nylon Olimpeak™ New 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

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 |

## Nylon Low Extractables New Certified Olimpeak™ Syringe Filter with Polypropylene Housing



- One of the traditional membranes used for filtration of HPLC samples is supported Nylon 66. Generally, a small quantity of the sample is passed through this filter prior to injection. This is done to reduce unwanted spikes in the chromatogram due to extractables leaching from the support material or membrane.
- The Nylon Low Extractables, is a HPLC certified 13 and 25 mm D. syringe filter with a unique unsupported Nylon

membrane. This new membrane does not release significant levels of extractables following an acetonitrile challenge.

| Reference | Description                                    | Pk  |
|-----------|------------------------------------------------|-----|
| TR-200475 | Nylon L.E. Filter, green , 0.45 µm, 25 mm D    | 100 |
| TR-200470 | Nylon L.E. Filter light green 0.20 µm, 25 mm D | 100 |
| TR-200465 | Nylon, L.E. Filter green 0.45 µm, 13 mm D      | 100 |
| TR-200460 | Nylon L.E. Filter light green 0.20 µm, 13 mm D | 100 |

## PTFE New Certified Olimpeak™ Syringe Filter with Polypropylene Housing



- The PTFE (polytetrafluoroethylene) is an 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 |

# Certified Olimpeak™ Syringe Filters Tk

## Polypropylene New 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 |

## PVDF New 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 |

## Regenerated Cellulose New 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 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-filte 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 |

# Tk Certified Olimpeak™ Syringe Filters

## Polyethersulfone New 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 |

## Cellulose Acetate New 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 |

## M.E. Cellulose New 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 |

# Certified Olimpeak™ Syringe Filters Tk

## Glass Microfibre GMF New 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 |

## MiniTip Certified Olimpeak™ Syringe Filters

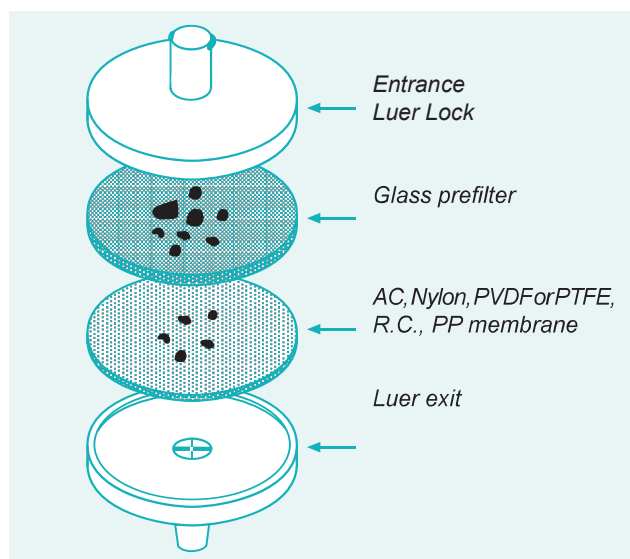


- Teknokroma has designed a new 13 mm syringe filter with a thin outlet called MiniTip, for direct filling of microvials.
- High quality MiniTip syringe filters are available with these membranes: Nylon, PES, PTFE, PVDF, RC, CN, CA, M.E.C and PP.
- Pore size can be 0.45 or 0.20 µm and the lot number 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-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-200465MT10 | Mini Tip Nylon L.E. 0.45 µm x 13 mm.D, Green                  | 1000 |
| TR-200460MT10 | Mini Tip Nylon L.E. 0.2 µm x 13 mm.D, Light Green             | 1000 |
| TR-200408MT10 | Mini Tip Cellulose Acetate 0.45 µm x 13 mm.D, Orange          | 1000 |
| TR-200409MT10 | Mini Tip Cellulose Acetate 0.2 µm x 13 mm.D, Light Orange     | 1000 |
| TR-200403MT10 | Mini Tip Polyethersulfone 0.45 µm x 13 mm.D, Violet           | 1000 |
| TR-200404MT10 | Mini Tip Polyethersulfone 0.2 µm x 13 mm.D, Light Violet      | 1000 |

# Tk Target Syringe Filters

## Filter with Glass prefilter New 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 | PP 100     |
| TR-200101G | 0.2 µm  | Nylon/Glass fibre 1 µm | PP 100     |
| TR-200102G | 0.45 µm | PTFE/Glass fibre 1 µm  | PP 100     |
| TR-200103G | 0.2 µm  | PTFE/Glass fibre 1 µm  | PP 100     |
| TR-200111G | 0.45 µm | PP/Glass fibre 1 µm    | PP 100     |
| TR-200112G | 0.2 µm  | PP/Glass fibre 1 µm    | PP 100     |
| TR-200445G | 0.45 µm | RC/Glass fibre 1 µm    | PP 100     |
| TR-200440G | 0.2 µm  | RC/Glass fibre 1 µm    | PP 100     |
| TR-200104G | 0.45 µm | M.E.C/Glass fibre 1 µm | PP 100     |
| TR-200105G | 0.2 µm  | M.E.C/Glass fibre 1 µm | PP 100     |
| TR-200106G | 0.45 µm | PVDF/Glass fibre 1 µm  | PP 100     |
| TR-200107G | 0.2 µm  | PVDF/Glass fibre 1 µm  | PP 100     |
| TR-200406G | 0.45 µm | CA/Glass fibre 1 µm    | PP 100     |
| TR-200407G | 0.20 µm | CA/Glass fibre 1 µm    | PP 100     |
| TR-200401G | 0.45 µm | PES/Glass fibre 1 µm   | PP 100     |
| TR-200402G | 0.20 µm | PES/Glass fibre 1 µm   | PP 100     |

## Target Syringe Filters (4mm Diameter)



- Assured quality - each lot independently tested for physical properties and membrane tested for UV extractables.
- Secure Luer Lok inlet
- Solvent resistant, low extractables polypropylene housing.

| Reference   | Description                  | Pore    | Pk  |
|-------------|------------------------------|---------|-----|
| CC-F2504-1  | Nylon 4 mm D                 | 0.45 µm | 100 |
| CC-F2504-2  | Nylon 4 mm D                 | 0.20 µm | 100 |
| CC-F2504-3  | PTFE 4 mm D                  | 0.45 µm | 100 |
| CC-F2504-4  | PTFE 4 mm D                  | 0.20 µm | 100 |
| CC-F2504-5  | PVDF 4 mm D                  | 0.45 µm | 100 |
| CC-F2504-6  | PVDF 4 mm D                  | 0.20 µm | 100 |
| CC-F2504-7  | Regenerated Cellulose 4 mm D | 0.45 µm | 100 |
| CC-F2504-8  | Regenerated Cellulose 4 mm D | 0.20 µm | 100 |
| CC-F2504-9  | Polypropylene 4 mm D         | 0.45 µm | 100 |
| CC-F2504-10 | Polypropylene 4 mm D         | 0.20 µm | 100 |
| CC-F2504-15 | Cellulose Acetate 4 mm D     | 0.45 µm | 100 |
| CC-F2504-16 | Cellulose Acetate 4 mm D     | 0.20 µm | 100 |

## Target Syringe Filter with polyethersulfone (PES) membrane



- Provides high flow rates and good throughput volum. Low protein binding and can be used with high temperature liquids.
- Good to excellent flow rate. PES is certified for Ion Chromatography.

### PES Certified for Ion Chromatography

| Reference   | Description                   | Pore    | Pk  |
|-------------|-------------------------------|---------|-----|
| CC-F2513-14 | PES (polyethersulfone), 17 mm | 0.45 µm | 100 |
| CC-F2513-17 | PES (polyethersulfone), 17 mm | 0.20 µm | 100 |
| CC-F2500-14 | PES (polyethersulfone), 30 mm | 0.45 µm | 100 |
| CC-F2500-17 | PES (polyethersulfone), 30 mm | 0.20 µm | 100 |

## Target Syringe Filters with Glass microfiber membrane



- GMB membranes are commonly used as pre-filters to remove large particulates and to extend the load capacity of the membrane.
- Membrane of choice for dissolution test.

### Glass Microfiber GMF

| Reference   | Description                 | Pore    | Pk  |
|-------------|-----------------------------|---------|-----|
| CC-F2500-18 | GMF Glass Microfiber, 30 mm | 0.70 µm | 100 |
| CC-F2500-19 | GMF Glass Microfiber, 30 mm | 1.20 µm | 100 |
| CC-F2500-20 | GMF Glass Microfiber, 30 mm | 3.10 µm | 100 |

## Target Syringe Filters 30 mm Diameter

| Reference   | Membrane              | Pore    | Diameter | Pk  |
|-------------|-----------------------|---------|----------|-----|
| CC-F2500-1  | Nylon                 | 0.45 µm | 30 mm    | 100 |
| CC-F2500-2  | Nylon                 | 0.20 µm | 30 mm    | 100 |
| CC-F2500-3  | PTFE                  | 0.45 µm | 30 mm    | 100 |
| CC-F2500-4  | PTFE                  | 0.20 µm | 30 mm    | 100 |
| CC-F2500-13 | PTFE                  | 1.00 µm | 30 mm    | 100 |
| CC-F2500-5  | PVDF                  | 0.45 µm | 30 mm    | 100 |
| CC-F2500-6  | PVDF                  | 0.20 µm | 30 mm    | 100 |
| CC-F2500-7  | Regenerated Cellulose | 0.45 µm | 30 mm    | 100 |
| CC-F2500-8  | Regenerated Cellulose | 0.20 µm | 30 mm    | 100 |
| CC-F2500-9  | Polypropylene         | 0.45 µm | 30 mm    | 100 |
| CC-F2500-10 | Polypropylene         | 0.20 µm | 30 mm    | 100 |
| CC-F2500-15 | Cellulose Acetate     | 0.45 µm | 30 mm    | 100 |
| CC-F2500-16 | Cellulose Acetate     | 0.20 µm | 30 mm    | 100 |

## Target Syringe Filters 17 mm Diameter

| Reference   | Membrane              | Pore    | Diameter | Pk  |
|-------------|-----------------------|---------|----------|-----|
| CC-F2513-1  | Nylon                 | 0.45 µm | 17 mm    | 100 |
| CC-F2513-2  | Nylon                 | 0.20 µm | 17 mm    | 100 |
| CC-F2513-3  | PTFE                  | 0.45 µm | 17 mm    | 100 |
| CC-F2513-4  | PTFE                  | 0.20 µm | 17 mm    | 100 |
| CC-F2513-5  | PVDF                  | 0.45 µm | 17 mm    | 100 |
| CC-F2513-6  | PVDF                  | 0.20 µm | 17 mm    | 100 |
| CC-F2513-7  | Regenerated Cellulose | 0.45 µm | 17 mm    | 100 |
| CC-F2513-8  | Regenerated Cellulose | 0.20 µm | 17 mm    | 100 |
| CC-F2513-9  | Polypropylene         | 0.45 µm | 17 mm    | 100 |
| CC-F2513-10 | Polypropylene         | 0.20 µm | 17 mm    | 100 |
| CC-F2513-14 | Polyethersulfone      | 0.45 µm | 17 mm    | 100 |
| CC-F2513-17 | Polyethersulfone      | 0.20 µm | 17 mm    | 100 |
| CC-F2513-15 | Cellulose Acetate     | 0.45 µm | 17 mm    | 100 |
| CC-F2500-16 | Cellulose Acetate     | 0.20 µm | 17 mm    | 100 |

## 750 µL Micro-Centrifugal Filters - Nonsterile



- Filter volumes as low as 50 µl up to 750 µl with low hold-up volume
- Use with any laboratory microcentrifuge
- Virgin polypropylene filter housing with tapered 2 mL, capped receiver tube

### 750 µL Micro-Centrifugal Filters - Nonsterile

| Reference  | Membrane          | Pore    | Pk  |
|------------|-------------------|---------|-----|
| CC-F2517-1 | Cellulose Acetate | 0.22 µm | 100 |
| CC-F2517-2 | Cellulose Acetate | 0.45 µm | 100 |
| CC-F2517-3 | Nylon             | 0.2 µm  | 100 |
| CC-F2517-4 | Nylon             | 0.45 µm | 100 |

## 2 mL Micro-Centrifugal Filters - Nonsterile



- Filter sample volumes up to 2 mL
- Virgin Polypropylene filter housing with tapered 5mL, capped receiver tube
- Use with benchtop or floor model centrifuges
- 500xG maximum centrifugal force

### 2mL Micro-Centrifugal Filters - Nonsterile

| Reference  | Membrane              | Pore    | Pk |
|------------|-----------------------|---------|----|
| CC-F2520-1 | Cellulose Acetate     | 0.22 µm | 25 |
| CC-F2520-2 | Cellulose Acetate     | 0.45 µm | 25 |
| CC-F2520-3 | Nylon                 | 0.20 µm | 25 |
| CC-F2520-4 | Nylon                 | 0.45 µm | 25 |
| CC-F2520-5 | PVDF                  | 0.20 µm | 25 |
| CC-F2520-6 | PVDF                  | 0.45 µm | 25 |
| CC-F2520-7 | Regenerated Cellulose | 0.20 µm | 25 |
| CC-F2520-8 | Regenerated Cellulose | 0.45 µm | 25 |

# Tk Certified Olimpeak™ Robotic Syringe Filters

New Certified AUTOMATIC OlimPeak Filter for automatic equipments Sotax and Zymark

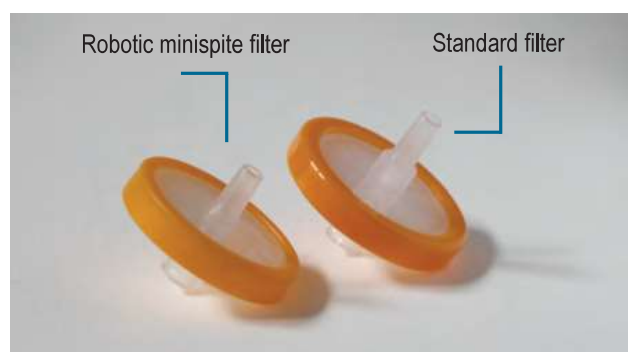


Automatic filter difference

- 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 leuer 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-200102A  | PTFE                   | 0.45 µm | PP      | 1000 |
| TR-200104A  | M.E.Cellulose          | 0.45 µm | PP      | 1000 |
| TR-200106A  | PVDF                   | 0.45 µm | PP      | 1000 |
| TR-200111A  | Polypropylene          | 0.45 µm | PP      | 1000 |
| TR-200440A  | Regenerated Cellulose  | 0.45 µm | PP      | 1000 |
| TR-200406A  | Cellulose Acetate      | 0.45 µm | PP      | 1000 |
| TR-200401A  | Polyethersulfone       | 0.45 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-200111GA | PP/Glass fibre 1 µm    | 0.45 µm | PP      | 1000 |
| TR-200445GA | RC/Glass fibre 1 µm    | 0.45 µm | PP      | 1000 |
| TR-200104GA | M.E.C/Glass fibre 1 µm | 0.45 µm | PP      | 1000 |
| TR-200106GA | PVDF/Glass fibre 1 µm  | 0.45 µm | PP      | 1000 |
| TR-200406GA | CA/Glass fibre 1 µm    | 0,45 µm | PP      | 1000 |
| TR-200401GA | PES/Glass fibre 1 µm   | 0,45 µm | PP      | 1000 |
| TR-200480GA | NC/Glass fibre 1 µm    | 0,45 µm | PP      | 1000 |



Robotic filter difference

## Certified Olimpeak™ Filters for Robotic Equipments Zotax and Zymark

- Teknokroma has developed new filters to use with robotic apparatus
- They are available in 25 mm D.
- The inlet is a female "Luer Lock" and the outlet is a male luer "Minispike".
- Pore size is 0.45 or 0.20 µm for the following membranes: Nylon, PVDF, PTFE, M.E. Cellulose, PP, Regenerated Cellulose, Cellulose Acetate Nitrocellulose, PES
- For the Glass Microfibre, the pore size is 1.0 µm
- The robotic filters are under strict quality control for reliable performance.
- Each pack contains 1000 units.
- All these filters can be adapted to automatic equipments as Sotax, Zymark, etc.
- The Glass membrane is the good choice for dissolution test.

| Reference    | Membrane               | Pore    | Housing | Pk   |
|--------------|------------------------|---------|---------|------|
| TR-200000R   | Fiber Glass            | 1.00 µm | PP      | 1000 |
| TR-2-200006R | Fiber Glass            | 2.00 µm | PP      | 1000 |
| TR-2-200007R | Fiber Glass            | 5.00 µm | PP      | 1000 |
| TR-200100R   | Nylon                  | 0.45 µm | PP      | 1000 |
| TR-200102R   | PTFE                   | 0.45 µm | PP      | 1000 |
| TR-200104R   | M.E.Cellulose          | 0.45 µm | PP      | 1000 |
| TR-200106R   | PVDF                   | 0.45 µm | PP      | 1000 |
| TR-200111R   | Polypropylene          | 0.45 µm | PP      | 1000 |
| TR-200440R   | Regenerated Cellulose  | 0.45 µm | PP      | 1000 |
| TR-200406R   | Cellulose Acetate      | 0.45 µm | PP      | 1000 |
| TR-200401R   | Polyethersulfone       | 0.45 µm | PP      | 1000 |
| TR-200100GR  | Nylon/Glass fibre 1 µm | 0.45 µm | PP      | 1000 |
| TR-200102GR  | PTFE/Glass fibre 1 µm  | 0.45 µm | PP      | 1000 |
| TR-200111GR  | PP/Glass fibre 1 µm    | 0.45 µm | PP      | 1000 |
| TR-200445GR  | RC/Glass fibre 1 µm    | 0.45 µm | PP      | 1000 |
| TR-200104GR  | M.E.C/Glass fibre 1 µm | 0.45 µm | PP      | 1000 |
| TR-200106GR  | PVDF/Glass fibre 1 µm  | 0.45 µm | PP      | 1000 |
| TR-200406GR  | CA/Glass fibre 1 µm    | 0,45 µm | PP      | 1000 |
| TR-200401GA  | PES/Glass fibre 1 µm   | 0,45 µm | PP      | 1000 |
| TR-200480GA  | NC/Glass fibre 1 µm    | 0,45 µm | PP      | 1000 |

# Olimpeak™ Membrane Filters for Mobile Phase Tk

## Membrane Filters



- Protect your instruments and columns eliminating particulates and gases from mobile phase
- Nylon and PVDF membrane filters are resistant to a wide range of organic and aqueous solvents.
- M.E. Cellulose membranes are used for filtration of aqueous mobile phase
- PTFE membrane filters are ideal for organic solvent

## Membrane filters for mobile phase filtration 47 mm D.



| Reference   | Membrane              | Pore Size µm | Diameter mm | Pk |
|-------------|-----------------------|--------------|-------------|----|
| TR-200 140  | Nylon                 | 0.45         | 47          | 50 |
| TR-200 150  | Nylon                 | 0.20         | 47          | 50 |
| TR-200 200  | PTFE                  | 0.45         | 47          | 50 |
| TR-200 210  | PTFE                  | 0.20         | 47          | 50 |
| TR-200 260  | M.E. Cellulose        | 0.45         | 47          | 50 |
| TR-200 270  | M.E. Cellulose        | 0.20         | 47          | 50 |
| TR-200 320  | PVDF                  | 0.45         | 47          | 50 |
| TR-200 330  | PVDF                  | 0.20         | 47          | 50 |
| TR-200 380  | Polipropylene         | 0.45         | 47          | 50 |
| TR-200 390  | Polipropylene         | 0.20         | 47          | 50 |
| TR-200 420  | Regenerated cellulose | 0.45         | 47          | 50 |
| TR-200 425  | Regenerated cellulose | 0.20         | 47          | 50 |
| TR-200 457G | Glass Microfiber      | 1.00         | 47          | 50 |
| TR-200 458  | Cellulose Acetate     | 0.45         | 47          | 50 |



## Filtering Equipment

- 47 mm filtration apparatus is recommended for filtration of mobile phase and removal of particles from HPLC solvents.
- Manufactured with first quality glass, tube of galss DURAN from Scchott.
- The porosity of the filtration plate is of number 3, which means a nominal pore size of 16-40 micrometers.

| Reference | Description                                                     |
|-----------|-----------------------------------------------------------------|
| TR-F1000  | Complete Filtering Equipment 1.000 ml vessel and 250 ml funnel. |
| TR-F1002  | Complete Filtering Equipment 2.000 ml vessel and 250 ml funnel. |
| TR-F1010  | Filtration vessel, frosted glass and 1.000 ml capacity          |
| TR-F1012  | Filtration vessel, frosted glass and 2.000 ml capacity          |
| TR-F1022  | Fritted glass support, with screw fitting.                      |
| TR-F1016  | Aluminium plier for the filtering equipment.                    |
| TR-F1018  | Galss Funnel with 250 ml capacity for the filtering equipment.  |

# Tk Olimpeak™ Membrane Filters for Sample Filtration

Membrane filters for sample filtration  
(need the holder 13/25 mm D.)



| Reference   | Membrane              | Pore Size µm | Diameter mm | Pk  |
|-------------|-----------------------|--------------|-------------|-----|
| TR-200109   | Nylon                 | 0.45         | 13          | 100 |
| TR-200110   | Nylon                 | 0.20         | 13          | 100 |
| TR-200220   | M.E. Cellulose        | 0.45         | 13          | 100 |
| TR-200230   | M.E. Cellulose        | 0.20         | 13          | 100 |
| TR-200160   | PTFE                  | 0.45         | 13          | 100 |
| TR-200170   | PTFE                  | 0.20         | 13          | 100 |
| TR-200280   | PVDF                  | 0.45         | 13          | 100 |
| TR-200290   | PVDF                  | 0.20         | 13          | 100 |
| TR-200340   | Polipropylene         | 0.45         | 13          | 100 |
| TR-200350   | Polipropylene         | 0.20         | 13          | 100 |
| TR-200400   | Regenerated cellulose | 0.45         | 13          | 100 |
| TR-200405   | Regenerated cellulose | 0.20         | 13          | 100 |
| TR-200120   | Nylon                 | 0.45         | 25          | 50  |
| TR-200130   | Nylon                 | 0.20         | 25          | 50  |
| TR-200240   | M.E. Cellulose        | 0.45         | 25          | 50  |
| TR-200250   | M.E. Cellulose        | 0.20         | 25          | 50  |
| TR-200180   | PTFE                  | 0.45         | 25          | 50  |
| TR-200190   | PTFE                  | 0.20         | 25          | 50  |
| TR-200300   | PVDF                  | 0.45         | 25          | 50  |
| TR-200310   | PVDF                  | 0.20         | 25          | 50  |
| TR-200360   | Poliypropylene        | 0.45         | 25          | 50  |
| TR-200370   | Polypropylene         | 0.20         | 25          | 50  |
| TR-200410   | Regenerated cellulose | 0.45         | 25          | 50  |
| TR-200415   | Regenerated cellulose | 0.20         | 25          | 50  |
| TR-200002 G | Glass microfibre      | 1.00         | 25          | 50  |



SX00 01300 - Holder 13 mm D

Holder for 13 mm. D Membrane

| Reference  | Description                     | Pk |
|------------|---------------------------------|----|
| SX00 01300 | Milipore Swinex Holder 13 mm. D | 10 |

