

# Whatman Uniflo Syringe Filters

Consistent performance. Maximum value.

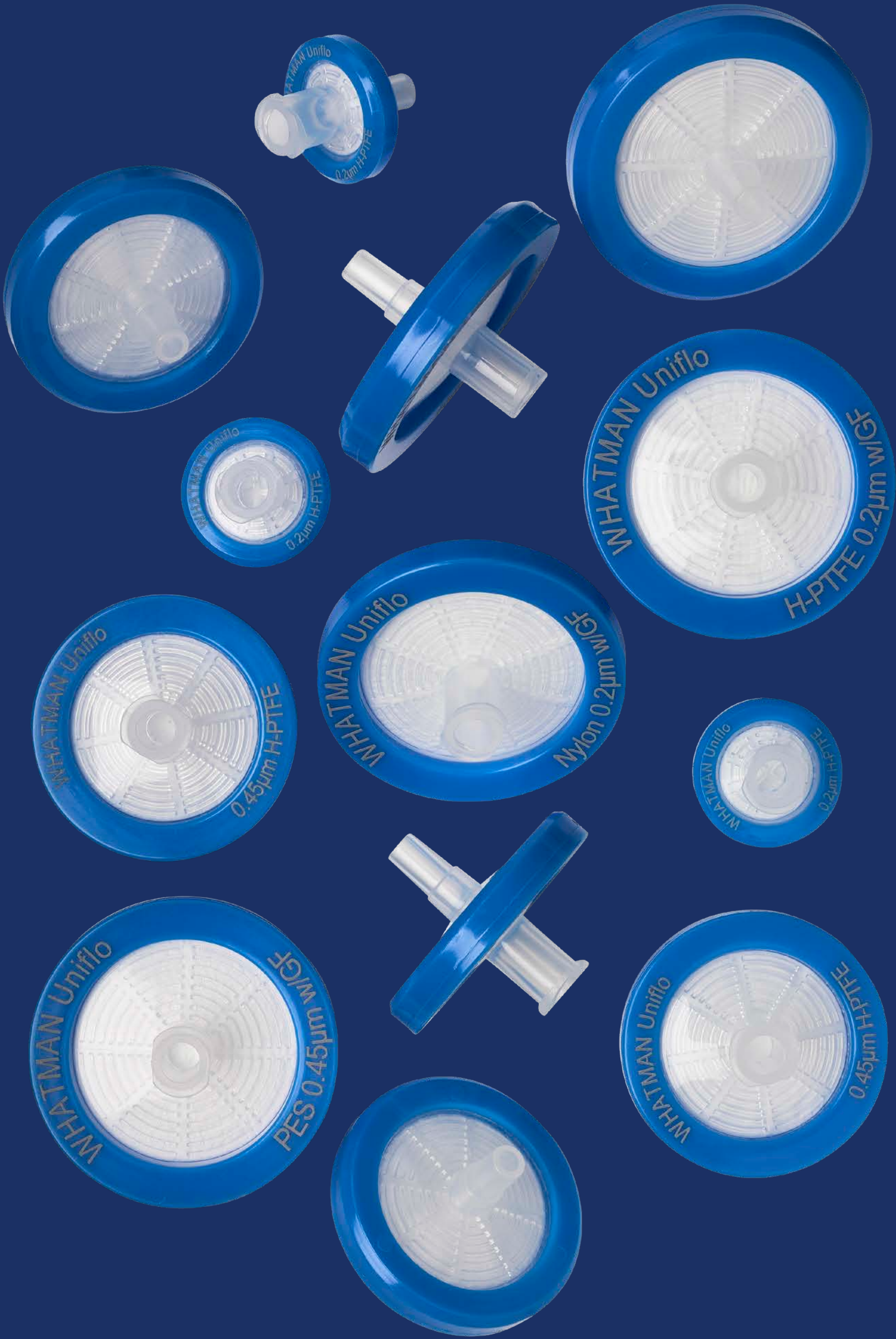


# Now extended to include 13 mm, 25 mm and 30 mm syringe filters

Whatman™ Uniflo™ Syringe Filters are disposable filters designed to provide clean filtrate from small volumes up to 100 mL. They are available in a variety of membrane choices with a polypropylene overmold housing. Whatman Uniflo syringe filters are available with:

- 13 mm, 25 mm or 30 mm diameters.
- 0.2 µm or 0.45 µm pore sizes
- Sterile or non-sterile options
- Laser etched printing on the filter for easy identification

| Filter media | Typical application                                                                      |
|--------------|------------------------------------------------------------------------------------------|
| Nylon        | Aqueous and/or organic samples; hydrophilic                                              |
| PES          | Aqueous samples                                                                          |
| PTFE         | Organic based samples, hydrophobic membrane                                              |
| PVDF         | Aqueous and/or organic based samples; low protein binding membrane                       |
| H-PTFE       | Hydrophilic aqueous and/or aggressive organic solvents; hydrophilic, low protein binding |



## Nylon membrane

Nylon membrane is hydrophilic and is a good choice for aqueous and/or aqueous-organic samples. The membrane offers good chemical resistance to most common HPLC solvents, however it has limited resistance to acids, bases, halogenated hydrocarbons, aldehydes and strong oxidising agents. The most common application is HPLC sample filtration.

## Polyethersulfone (PES) membrane

Polyethersulfone membrane provides durability, high temperature resistance, good chemical compatibility and low protein absorption. It is particularly suitable for filtration of serum, plasma and tissue culture solutions as well as other protein containing solutions where minimal adsorptive protein loss is desired.

## Polytetrafluoroethylene (PTFE) membrane

Polytetrafluoroethylene membrane is hydrophobic and will not allow water to pass without high pressures. Aqueous solutions may be filtered if the membrane is initially “wetted” with alcohol or another appropriate solvent. Polytetrafluoroethylene membrane will stop aqueous aerosols in gas streams.

## Polyvinylidene difluoride (PVDF) membrane

Polyvinylidene fluoride membrane is a suitable choice for most HPLC sample preparation applications. The membrane is hydrophilic with low water breakthrough values. It offers good chemical resistance to all common HPLC solvents.

## Hydrophilic polytetraflourethlene (H-PTFE) membrane

Hydrophilic PTFE membrane can be used for both aqueous and aggressive organic solvents. This membrane is suitable for uHPLC/HPLC sample preparation as well as many other applications in a busy, high volume lab as its dual capability handles most solvents.

## Integrity test data

| Description                       | Pore size microns (µm) | Minimum bubble point (psi) |
|-----------------------------------|------------------------|----------------------------|
| Nylon                             | 0.2                    | 29.0                       |
| Nylon                             | 0.45                   | 20.0                       |
| Polyethersulfone (PES)            | 0.2                    | 40.0                       |
| Polyethersulfone (PES)            | 0.45                   | 33.0                       |
| Polytetrafluoroethylene (PTFE)*   | 0.2                    | 10.0                       |
| Polytetrafluoroethylene (PTFE)*   | 0.45                   | 6.0                        |
| Polyvinylidene diofluoride (PVDF) | 0.2                    | 39.0                       |
| Polyvinylidene diofluoride (PVDF) | 0.45                   | 17.5                       |

\* Bubble point determined with 95% IPA (v/v). All others determined with water.



# Technical data

## Whatman Uniflo 13 mm syringe filters

|                             |                                                                                         |
|-----------------------------|-----------------------------------------------------------------------------------------|
| Dimensions:                 | 19.6 mm × 16.9 mm                                                                       |
| Filtration area:            | 0.88 cm²                                                                                |
| Maximum operating pressure: | 67.5 psi                                                                                |
| Housing:                    | Polypropylene                                                                           |
| Volume "hold-up":           | ≤ 50 µL after air purge                                                                 |
| Flow direction:             | Flow should enter from inlet                                                            |
| Connectors:                 | Inlet: female luer lock (FLL)<br>Outlet: male luer lock (ML)                            |
| Sterilization*:             | Autoclave at 121°C at 15 psi for 20 minutes                                             |
| Biosafe:                    | Polymer grade and membrane types meet the USP test requirements (for class VI plastics) |
| Filter media:               | See chart on last page                                                                  |

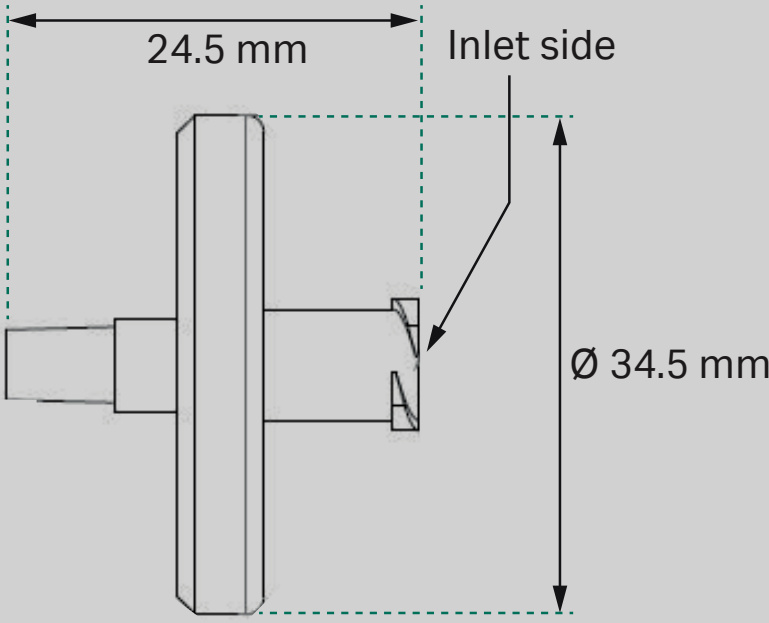
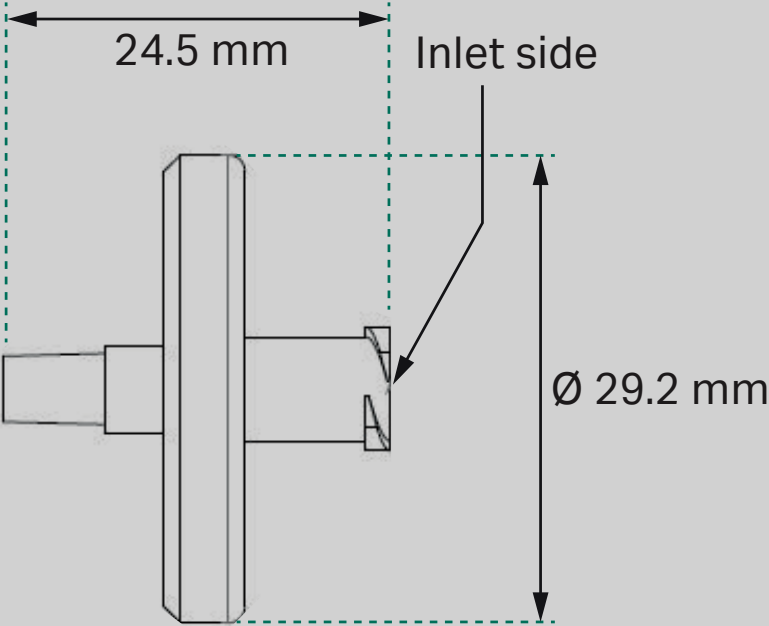
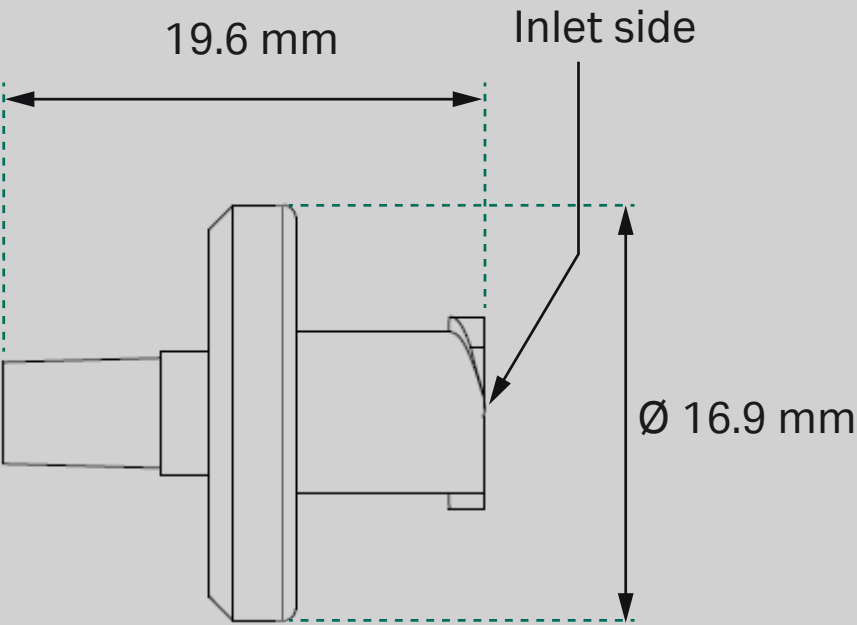
## Whatman Uniflo 25 mm syringe filters

|                             |                                                                                         |
|-----------------------------|-----------------------------------------------------------------------------------------|
| Dimensions:                 | 24.5 mm × 29.2 mm                                                                       |
| Filtration area:            | 3.45 cm²                                                                                |
| Maximum operating pressure: | 67.5 psi                                                                                |
| Housing:                    | Polypropylene                                                                           |
| Volume "hold-up":           | ≤ 100 µL after air purge                                                                |
| Flow direction:             | Flow should enter from inlet                                                            |
| Connectors:                 | Inlet: female luer lock (FLL)<br>Outlet: male luer lock (ML)                            |
| Sterilization*:             | Autoclave at 121°C at 15 psi for 20 minutes                                             |
| Biosafe:                    | Polymer grade and membrane types meet the USP test requirements (for class VI plastics) |
| Filter media:               | See chart on last page                                                                  |

## Whatman Uniflo 30mm w/GF prefilter syringe filter

|                             |                                                                                         |
|-----------------------------|-----------------------------------------------------------------------------------------|
| Dimensions:                 | 24.5 mm × 24.5 mm                                                                       |
| Filtration area:            | 4.98 cm²                                                                                |
| Maximum operating pressure: | 67.5 psi                                                                                |
| Housing:                    | Polypropylene                                                                           |
| Volume "hold-up":           | ≤ 200 µL after air purge                                                                |
| Flow direction:             | Flow should enter from inlet                                                            |
| Prefiltration Media:        | 100% borosilicate glass                                                                 |
| Connectors:                 | Inlet: female luer lock (FLL)<br>Outlet: male luer lock (ML)                            |
| Sterilization*:             | Autoclave at 121°C at 15 psi for 20 minutes                                             |
| Biosafe:                    | Polymer grade and membrane types meet the USP test requirements (for class VI plastics) |
| Filter media:               | See chart on last page                                                                  |

\* Non-sterile versions only



# Chemical compatibility of membranes and housings

| Solvent               | NYL | PES | PTFE <sup>†</sup> | PVDF | H-PTFE |
|-----------------------|-----|-----|-------------------|------|--------|
| Acetic acid, 5%       | R   | R   | R                 | R    | R      |
| Acetic acid, glacial  | LR  | R   | R                 | R    | R      |
| Acetone               | R   | NR  | R                 | NR   | R      |
| Acetonitrile          | R   | NR  | R                 | R    | R      |
| Ammonia, 6N           | R   | R   | R                 | LR   | NR     |
| Amyl acetate          | R   | LR  | R                 | LR   | R      |
| Amyl alcohol          | R   | NR  | R                 | R    | R      |
| Benzene*              | LR  | R   | R                 | R    | R      |
| Benzyl alcohol*       | LR  | NR  | R                 | R    | R      |
| Boric acid            | LR  |     | R                 | R    |        |
| Butyl alcohol         | R   | R   | R                 | R    | R      |
| Butyl chloride*       | NR  |     | R                 | R    |        |
| Carbon tetrachloride* | LR  | NR  | R                 | R    | R      |
| Chloroform*           | NR  | NR  | R                 | R    | R      |
| Chlorobenzene*        | NR  | NR  | R                 | R    |        |
| Citric acid           | LR  | R   | R                 | R    |        |
| Cresol*               | NR  | NR  | R                 | NR   |        |
| Cyclohexanone         | NR  | NR  | R                 | R    |        |
| Cyclohexane*          | NR  | NR  | R                 | R    | R      |
| Diethyl acetamide     | R   |     | R                 | NR   |        |
| Dimethyl formamide    | R   | NR  | R                 | NR   | R      |
| Dioxane               | R   | LR  | R                 | LR   |        |
| DMSO                  | R   | NR  | R                 | LR   | R      |
| Ethanol               | R   | R   | R                 | R    |        |
| Ethers*               | R   | R   | R                 | LR   | R      |
| Ethyl acetate         | R   | NR  | R                 | NR   | R      |
| Ethylene glycol       | R   | R   | R                 | R    | R      |

| Solvent                  | NYL | PES | PTFE <sup>†</sup> | PVDF | H-PTFE |
|--------------------------|-----|-----|-------------------|------|--------|
| Formaldehyde             | R   | R   | R                 | R    | R      |
| Freon TF*                | NR  | R   | R                 | R    | TF     |
| Formic acid              | NR  | R   | R                 | R    |        |
| Hexane                   | R   | R   | R                 | R    | R      |
| Hydrochloric acid, conc* | NR  | R   | R                 | R    | NR R   |
| Hydrofluoric acid*       | NR  |     | R                 | R    |        |
| Isobutyl alcohol         | R   |     | R                 | R    | R      |
| Isopropyl alcohol        | R   |     | R                 | R    | R      |
| Methanol                 | R   | R   | R                 | R    | R      |
| Methyl ethyl ketone      | R   | NR  | R                 | NR   | R      |
| Methylene chloride*      | NR  | NR  | R                 | R    | R      |
| Nitric acid, conc*       | NR  | NR  | R                 | R    | R      |
| Nitric acid, 6N*         | NR  | LR  | R                 | R    | NR     |
| Nitrobenzene*            | LR  | NR  | R                 | R    |        |
| Pentane*                 | R   | R   | R                 | R    |        |
| Perchloro ethylene*      | LR  | NR  | R                 | R    | R      |
| Phenol 0.5%              | NR  | NR  | R                 | R    |        |
| Pyridine                 | LR  | NR  | R                 | NR   | R      |
| Sodium hydroxide, 6N     | LR  | R   | R                 | NR   | R      |
| Sulfuric acid, conc*     | NR  | NR  | R                 | NR   | R      |
| Tetrahydrofuran*         | R   | NR  | R                 | R    | R      |
| Toluene*                 | LR  | NR  | R                 | R    | R      |
| Trichloroethane*         | LR  | NR  | R                 | R    | R      |
| Trichloroethylene*       | NR  | NR  | R                 | R    | R      |
| Water                    | R   | R   | R                 | R    | R      |
| Xylene*                  | LR  | LR  | R                 | R    | R      |

R = Resistant; LR = Limited resistance; NR = Not recommended

\* Short-term resistance of housing.

The above data is to be used as a guide only. Testing prior to application is recommended.

† Membrane may need pre-wetting with isopropanol/methanol if filtering a polar liquid.

# Ordering information

| Diameter (mm) | Sterility  | Pore size (µm) | Membrane | Catalog number | Quantity/pack |
|---------------|------------|----------------|----------|----------------|---------------|
| 13            | Nonsterile | 0.2            | PVDF     | 9909-1302      | 500           |
| 13            | Nonsterile | 0.45           | PVDF     | 9909-1304      | 500           |
| 13            | Nonsterile | 0.2            | Nylon    | 9910-1302      | 500           |
| 13            | Nonsterile | 0.45           | Nylon    | 9910-1304      | 500           |
| 13            | Nonsterile | 0.2            | PTFE     | 9911-1302      | 500           |
| 13            | Nonsterile | 0.45           | PTFE     | 9911-1304      | 500           |
| 13            | Nonsterile | 0.2            | H-PTFE   | 9920-1302      | 100           |
| 13            | Nonsterile | 0.2            | H-PTFE   | 9921-1302      | 500           |
| 13            | Nonsterile | 0.45           | H-PTFE   | 9920-1304      | 100           |
| 13            | Nonsterile | 0.45           | H-PTFE   | 9921-1304      | 500           |
| 13            | Nonsterile | 0.2            | PES      | 9912-1302      | 500           |
| 13            | Nonsterile | 0.45           | PES      | 9912-1304      | 500           |
| 25            | Nonsterile | 0.2            | PVDF     | 9909-2502      | 500           |
| 25            | Nonsterile | 0.45           | PVDF     | 9917-2504      | 100           |
| 25            | Nonsterile | 0.45           | PVDF     | 9909-2504      | 500           |
| 25            | Nonsterile | 0.2            | Nylon    | 9910-2502      | 500           |
| 25            | Nonsterile | 0.45           | Nylon    | 9918-2504      | 100           |
| 25            | Nonsterile | 0.45           | Nylon    | 9910-2504      | 500           |
| 25            | Nonsterile | 0.2            | PTFE     | 9911-2502      | 500           |
| 25            | Nonsterile | 0.45           | PTFE     | 9911-2504      | 500           |
| 25            | Nonsterile | 0.2            | H-PTFE   | 9920-2502      | 100           |
| 25            | Nonsterile | 0.2            | H-PTFE   | 9921-2502      | 500           |
| 25            | Nonsterile | 0.45           | H-PTFE   | 9920-2504      | 100           |
| 25            | Nonsterile | 0.45           | H-PTFE   | 9921-2504      | 500           |
| 25            | Nonsterile | 0.2            | PES      | 9912-2502      | 500           |
| 25            | Nonsterile | 0.45           | PES      | 9912-2504      | 500           |
| 13            | Sterile    | 0.2            | PES      | 9916-1302      | 100           |
| 13            | Sterile    | 0.45           | PES      | 9916-1304      | 100           |
| 25            | Sterile    | 0.2            | PVDF     | 9913-2502      | 45            |
| 25            | Sterile    | 0.45           | PVDF     | 9913-2504      | 45            |
| 25            | Sterile    | 0.2            | PES      | 9914-2502      | 45            |
| 25            | Sterile    | 0.45           | PES      | 9914-2504      | 45            |
| 25            | Sterile    | 0.2            | PES      | 9915-2502      | 200           |
| 25            | Sterile    | 0.45           | PES      | 9915-2504      | 200           |

| Diameter (mm)           | Sterility   | Pore size (µm) | Membrane | Catalog number | Quantity/pack |
|-------------------------|-------------|----------------|----------|----------------|---------------|
| 30 mm with GF prefilter | Non-sterile | 0.2            | PES      | 9923-3002      | 100           |
| 30 mm with GF prefilter | Non-sterile | 0.45           | PES      | 9923-3004      | 100           |
| 30 mm with GF prefilter | Non-sterile | 0.2            | PES      | 9924-3002      | 500           |
| 30 mm with GF prefilter | Non-sterile | 0.45           | PES      | 9924-3004      | 500           |
| 30 mm with GF prefilter | Non-sterile | 0.2            | PVDF     | 9925-3002      | 100           |
| 30 mm with GF prefilter | Non-sterile | 0.45           | PVDF     | 9925-3004      | 100           |
| 30 mm with GF prefilter | Non-sterile | 0.2            | PVDF     | 9926-3002      | 500           |
| 30 mm with GF prefilter | Non-sterile | 0.45           | PVDF     | 9926-3004      | 500           |
| 30 mm with GF prefilter | Non-sterile | 0.2            | PTFE     | 9927-3002      | 100           |
| 30 mm with GF prefilter | Non-sterile | 0.45           | PTFE     | 9927-3004      | 100           |
| 30 mm with GF prefilter | Non-sterile | 0.2            | PTFE     | 9928-3002      | 500           |
| 30 mm with GF prefilter | Non-sterile | 0.45           | PTFE     | 9928-3004      | 500           |
| 30 mm with GF prefilter | Non-sterile | 0.2            | Nylon    | 9929-3002      | 100           |
| 30 mm with GF prefilter | Non-sterile | 0.45           | Nylon    | 9929-3004      | 100           |
| 30 mm with GF prefilter | Non-sterile | 0.2            | Nylon    | 9930-3002      | 500           |
| 30 mm with GF prefilter | Non-sterile | 0.45           | Nylon    | 9930-3004      | 500           |
| 30 mm with GF prefilter | Non-sterile | 0.2            | H-PTFE   | 9931-3002      | 100           |
| 30 mm with GF prefilter | Non-sterile | 0.45           | H-PTFE   | 9931-3004      | 100           |
| 30 mm with GF prefilter | Non-sterile | 0.2            | H-PTFE   | 9932-3002      | 500           |
| 30 mm with GF prefilter | Non-sterile | 0.45           | H-PTFE   | 9932-3004      | 500           |

*PTFE—Polytetrafluoroethylene*  
*PVDF—Polyvinylidene difluoride*  
*PES—Polyethersulfone*  
*H-PTFE – Hydrphilic polytetrafluoroethylene*

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CY14034-16Dec-BR

