

Syringe Filter Membrane Compatibility Chart

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

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
 PES = Polyethersulfone
 CA = Cellulose Acetate
 RC = Regenerated Cellulose
 PP = Polypropylene
 GMF = Glass MicroFiber

| Chemical | Nylon | PTFE | PVDF | PES | CA | RC | PP | GMF |
|----------------------------|-------|------|------|-----|----|----|----|-----|
| <i>ACIDS</i> | | | | | | | | |
| 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 | LC | C | C |
| Nitric, Concentrated | IC | C | C | IC | IC | IC | C | LC |
| Nitric, 25% | IC | C | C | C | IC | IC | C | LC |
| Phosphoric, 25% | IC | C | ND | ND | C | LC | C | ND |
| Formic, 25% | IC | C | ND | ND | LC | C | C | C |
| Trichloroacetic, 10% | IC | C | ND | ND | C | C | C | ND |
| <i>ALCOHOLS</i> | | | | | | | | |
| 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 |
| <i>ALKALIES</i> | | | | | | | | |
| Ammonium Hydroxide, 25% | C | C | LC | C | C | LC | C | C |
| Sodium Hydroxide, 3N | C | C | C | C | IC | LC | C | IC |
| <i>AMINES AND AMIDES</i> | | | | | | | | |
| 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 |

Syringe Filter Membrane Compatibility, contd.

| Chemical | Nylon | PTFE | PVDF | PES | CA | RC | PP | GMF |
|------------------------------------|-------|------|------|-----|----|----|----|-----|
| <i>ESTERS</i> | | | | | | | | |
| 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 Cellusolve | ND | C | ND | IC | IC | C | C | C |
| 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 |
| <i>HALOGENATED HYDROCARBONS</i> | | | | | | | | |
| 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 |
| <i>HYDROCARBONS</i> | | | | | | | | |
| Hexane/Xylene | C | C | C | IC | C | C | IC | C |
| Toluene/Benzene | C | C | C | IC | C | C | IC | C |
| Kerosene/Gasoline | C | C | C | LC | C | C | LC | ND |
| Tetralin/Decalin | ND | C | C | ND | C | C | ND | ND |
| <i>KETONES</i> | | | | | | | | |
| 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 |
| <i>ORGANIC OXIDES</i> | | | | | | | | |
| Ethyl Ether | C | C | C | C | C | C | LC | ND |
| Dioxane | C | C | LC | IC | I | C | C | C |
| Tetrahydrofuran | C | C | LC | IC | I | C | C | C |
| Triethanolamine | C | C | ND | ND | C | C | ND | ND |
| Dimethylsulfoxide (DMSO) | C | C | IC | IC | I | C | C | C |
| Isopropyl Ether | ND | C | C | C | C | C | C | ND |
| <i>MISCELLANEOUS</i> | | | | | | | | |
| Phenol, Aqueous Solution, 10% | ND | C | LC | IC | IC | IC | C | C |
| Formaldehyde Aqueous Solution, 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 |

Target® Syringe Filter Membrane Selection Guide

Choose a filter or membrane based on:

1. Chemical compatibility of the membrane and housing with your sample matrix
2. Size and amount of particulates in the sample
3. Potential interactions (binding) between the membrane and sample components
4. Special considerations such as requirement for pre-filter or inorganic ion certification

Target Syringe Filter Housings

- Target Syringe filter housings are manufactured from solvent-resistant, low-extractable polypropylene resins specifically selected for wide compatibility with common HPLC sample matrices.
- Solutions at temperatures up to 100°C can be filtered using Target syringe filters.
- Target syringe filters can be sterilized by autoclave at 125°C for 15 minutes.
- The inlet connection is an enhanced female Luer-Lok™ fitting designed for extra security when attached to a Luer-Lok syringe.
- The outlet fitting is a standard size male Luer-slip fitting for ease of filtrate collection.
- Target polypropylene syringe filter housings meet the requirements of 21 CFR 177.1520.

This table offers general guidelines for membrane characteristics and compatible applications.

| Membrane Type | Membrane Characteristics | Applications |
|-----------------------|---|---|
| Cellulose Acetate | Low protein binding, ideal for aqueous-based samples; high protein recovery from filtrate; lower protein binding compared to PVDF | Tissue Culture media filtration, sensitive biological samples |
| Glass MicroFiber | Larger porosity; able to remove large particulates without clogging | Dissolution testing, general filtration |
| Nylon | Most frequently selected membrane; broad compatibility with aqueous and organic samples; naturally hydrophilic membrane; extremely low in extractables; excellent flowrate with most sample matrices; not compatible with strong acids or bases | General laboratory filtration; filtration for most HPLC samples. NOTE: Nylon binds protein, do not use when high protein recovery is desired |
| Polyethersulfone | High flowrates with good throughput volume; low protein binding; compatible with high temperature liquids; mechanically strong membrane low in inorganic extractable ions | PES is certified for Ion Chromatography; Tissue Culture filtration; filtration of proteins and nucleic acids |
| Polypropylene | Hydrophilic membrane has wide chemical compatibility with organic solvents; low nonspecific protein binding | Filtration of biological samples; filtration of aggressive organic solutions |
| PTFE | Hydrophobic membrane is resistant to nearly all solvents, acids, and bases; membrane is mechanically strong and will withstand exposure to high temperature liquids; low in extractables; PTFE blocks water vapor; can be used to filter aqueous solutions after prewetting with an alcohol | Filtration of aggressive organic, highly basic or hot solutions, ideal for transducer protectors |
| PVDF | Hydrophilic membrane with good solvent resistance; low UV absorbing extractables and low nonspecific binding | General biological filtration; filtration of samples where high protein recovery is desired |
| Regenerated Cellulose | Hydrophilic membrane with good solvent resistance, extremely low nonspecific binding; compatible with nearly all common HPLC solvents; tolerates aqueous samples in pH range of 3 to 12 | Membrane of choice for low nonspecific binding applications; Tissue Culture media filtration and general biological sample filtration |