Syringe Filter Chemical Compatibility

PHENEX™ SYRINGE FILTERS

Chemical compatibility is a critical consideration when selecting the proper sample prep syringe filter for your application. This chart outlines the chemical compatibility of the most common syringe filters. The contact time was 24 hours at 20°C.

Syringe Filter Chemical Compatibility	MEMBRANE							HOUSING	
	Regenerated Cellulose (RC)	Polytetrafluoroethylene (PTFE)	Cellulose Acetate (CA)	Cellulose Acetate + Glass Fiber (CA + GF)	Polyethersulfone (PES)	Nylon (NY)	Glass Fiber (GF)	MBS	PP
Filter Housing	PP	PP	MBS	MBS	MBS	PP	MBS	MBS	PP
Sterilization									
Ethylene oxide	++	++	++	++	++	++	++	++	++
Gamma irradiation	–	–	++	++	++	–	++	++	–
Autoclaving 121 °C, 30 min	++	++	–	–	–	++	–	–	++
Solvents									
Acetone	++	++	–	–	–	++	–	–	++
Acetonitrile	++	++	–	–	–	n.a.	–	–	++
Benzene	++	++	–	–	–	++	–	–	++
Benzyl alcohol	+	+	–	–	–	+	–	–	+
n-Butyl acetate	++	++	–	–	–	++	–	–	++
n-Butanol	++	++	+	+	+	++	++	++	++
Carbon tetrachloride	–	–	–	–	–	–	–	–	–
Cellosolve	–	–	–	–	–	–	–	–	–
Chloroform	++	++	–	–	–	++	–	–	++
Cyclohexane	+	+	+	+	–	+	+	+	+
Cyclohexanone	+	+	–	–	–	+	–	–	+
Diethylacetamide	++	++	–	–	–	++	–	–	++
Diethyl ether	++	++	–	–	–	++	–	–	++
Dimethyl formamide	+	+	–	–	–	+	–	–	+
Dimethylsulfoxide	++	++	–	–	–	++	–	–	++
Dioxane	++	++	–	–	–	++	–	–	++
Ethanol, 98%	+	+	–	–	–	+	–	–	+
Ethyl acetate	+	+	–	–	–	+	–	–	+
Ethylene glycol	++	++	+	+	++	++	++	++	++
Formamide	+	++	–	–	++	++	++	++	++
Glycerin	+	+	+	+	+	+	+	+	+
n-Heptane	++	++	+	+	+	++	+	+	++
n-Hexane	+	+	+	+	+	+	+	+	+
Isobutanol	–	–	+	+	++	–	++	++	–
Isopropanol	++	++	–	+	–	++	–	–	++
Isopropyl acetate	++	++	–	–	–	++	–	–	++
Methanol, 98%	+	+	–	+	+	+	++	++	+
Methyl acetate	+	+	–	–	–	+	–	–	+
Methylene chloride	++	++	–	–	–	++	–	–	++
Methyl ethyl ketone	+	+	–	–	–	+	–	–	+
Methyl isobutyl ketone	+	+	–	–	–	+	–	–	+
Monochlorobenzene	+	+	–	–	–	+	–	–	+
Nitrobenzene	+	+	–	+	–	+	–	–	+
n-Pentane	++	++	+	+	+	++	+	+	++
Perchloroethylene	++	++	–	–	–	++	–	–	++
Pyridine	++	++	–	–	–	++	–	–	++
Tetrahydrofuran	++	++	–	++	–	++	–	–	++
Toluene	++	++	–	++	–	++	–	–	++
Trichloroethane	n.a.	n.a	–	–	–	n.a.	–	–	n.a.
Trichloroethylene	++	++	–	++	–	++	–	–	++
Xylene	+	+	–	–	–	+	–	–	+
Acids									
Acetic acid, 25%	+	+	–	–	–	–	–	–	+
Acetic acid, 80%	+	+	–	–	–	–	–	–	+
Hydrofluoric acid, 25%	+	+	–	–	+	–	+	+	+
Hydrofluoric acid, 50%	+	+	–	–	+	–	+	+	+
Hydrochloric acid, 15%	–	+	+	+	+	–	+	+	+
Hydrochloric acid, 20%	–	+	–	–	+	–	+	+	+
Nitric acid, 30%	–	+	–	–	+	–	+	+	+
Nitric acid, conc.	–	–	–	–	–	–	–	–	–
Perchloric acid, 25%	–	+	–	–	–	–	n.a.	n.a.	+
Phosphoric acid, 1%	–	+	+	+	+	–	+	+	+
Phosphoric acid, 86%	–	+	+	+	+	–	+	+	+
Sulfuric acid, 25%	+	++	–	–	+	–	+	+	++
Sulfuric acid, 98%	–	+	–	–	–	–	–	–	+
Trichloroacetic acid, 25%	+	+	–	–	–	–	–	–	+
Bases									
Ammonia, 1N	+	++	–	–	–	++	–	–	++
Ammonium hydroxide, 25%	+	+	–	–	–	+	–	–	+
Potassium hydroxide, 32%	–	++	–	–	–	+	–	–	++
Sodium hydroxide, 32%	–	+	–	–	–	+	–	–	+
Sodium hydroxide, 1N	+	++	–	–	–	++	–	–	++
Aqueous Solutions									
Formalin, 30%	+	+	+	+	+	+	+	+	+
Sodium hypochlorite, 5%	–	+	–	–	+	–	+	+	+
Hydrogen peroxide, 35%	–	++	–	–	+	–	+	+	++

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Legend

Compatible: ++
Limited compatbility: +
Not compatible: –
MBS: Methacrylate Butadiene Styrene
PP: Polypropylene
n.a.: Not analyzed

Chemical compatibilities can be influenced by various factors. Therefore, we recommend that you confirm compatibility with the liquid you want to filter by performing a trial filtration run before you start your actual filtration. Both membrane & housing compatibility need to be considered together.

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