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Chemical Resistance of Filter Membrane PES (Vacuum Filtration "rapid"-Filtermax and Syringe Filter) PTFE (Filter Screw Cap and TubeSpin® Bioreactor Cap)

The following table evaluates the chemical resistance to various fluids. In general, common chemical names are used.

When assessing the resistance of TPP products to chemicals, the following factors must be considered:

- Exposure time
- Concentration of chemicals
- Thermal stress (e.g., autoclave)
- Mechanical stress (e.g., applied force)
- Exposure to UV radiation
- Aging effects (e.g., caused by detergents)
- Other environmental factors

TPP's recommendations are based on technical literature and information provided by raw material manufacturers. They have been carefully prepared and are intended as a general guide for users of plastic materials. However, they cannot replace suitability testing performed by the user under actual working conditions.

Resistance is categorized based on the material's stability under standard conditions.

R = Resistant	**LR = Limited Resistance**	**NR = Not Resistant**
Continuous exposure does not cause significant changes. The membrane remains stable and retains its physical properties over time.	Continuous exposure causes moderate changes in physical properties or dimensions (e.g., swelling, softening). The membrane may be suitable for short-term, small-volume, and non-critical applications.	Not suitable for continuous exposure. Not suitable for exposure. The membrane may dissolve, shrink, or lose mechanical integrity.

ACIDS	**PES**	**PTFE**
Acetic acid, 25%	R	R
Acetic acid, 100%, glacial	LR	R
Formic acid, 25%	R	R
Formic acid, 100%	LR	R
Hydrochloric acid, 25%	R	R
Hydrochloric acid 37%, Conc.	R	R
Nitric acid, 25%	NR	R
Nitric acid, 60%	NR	R
Phosphoric acid, 25%	-	R
Sulfuric acid, 25%	NR	R
Sulfuric acid, 98%, Conc.	NR	R

ALCOHOLS	PES	PTFE
Amyl alcohol	NR	R
Benzyl alcohol	NR	R
Ethanol 70%	LR	R
Ethanol 98%	LR	R
Ethylene glycol	LR	R
Glycerol	LR	R
Isopropanol	R	R
Methanol 98%	LR	R
n-Propanol	LR	R
Phenol	NR	R
Propylene glycol	LR	R
BASES	**PES**	**PTFE**
Ammonium hydroxide, 25%	NR	R
Ammonium hydroxide, 1 N	LR	R
Potassium hydroxide, 1 N	R	R
Sodium hydroxide, 5%	LR	R
Sodium hydroxide, 1 N	LR	R
Sodium hydroxide, 6 N	NR	R
ESTERS	**PES**	**PTFE**
Amyl acetate	NR	R
Butyl acetate	NR	R
Benzyl benzoate	NR	R
Ethyl acetate	NR	R
2-Ethoxyethyl acetate	NR	R
Methyl acetate	NR	R
2-Methoxyethanol acetate	NR	R
Propyl acetate	NR	R
HYDROCARBONS ALIPHATIC	**PES**	**PTFE**
Gasoline	LR	R
Hexane	NR	R
Kerosene	R	R
HYDROCARBONS AROMATIC	**PES**	**PTFE**
Toluene	LNR	R
Xylene	NR	R
HALOGENTATED HYDROCARBONS	**PES**	**PTFE**
Carbon tetrachloride	NR	R
Chloroform	NR	R
Freon	LR	R
Methylene chloride	NR	R
Chlorobenzene	NR	R
Tetrachloroethene	NR	R
1,1,1-Trichloroethane	LR	R
1,1,2-Trichloroethane	LR	R
Trichloroethylene	NR	R

KETONES	PES	PTFE
Acetone	NR	R
Cyclohexanone	NR	R
Butan-2-one	NR	R
MISCELLANEOUS	**PES**	**PTFE**
Acetonitrile	LR	R
Acrylamide	R	R
Dimethyl sulfoxide (DMSO)	NR	R
Dioxane	LR	R
Diethyl ether	R	R
Formaldehyde, 30%	R	R
Hydrogen peroxide, 30%	-	R
2-Methoxyethanol	--	R
Pyridine	NR	R
Tetrahydrofuran	NR	R
Water	R	R

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