Chemical compatibility of filter materials and sealing

Legend

● recommended ● limited application ● not recommended - insufficient data

Medium	Filter materials							Sealing			
	Polyamide (Nylon$_{6+66}$)	Fluorine plastic (PVDF)	Polyether sulfone (PES)	Fluorine plastic-4 (PTFE)	Polypro-pylene (PP)	Glass fiber (Glass)	Stainless steel	Silicone	Viton	EPDM	PTFE
Acids											
Acetic acid, 96 %	●	●	●	●	●	●	●	●	●	●	●
Acetic acid, 25 %	●	●	●	●	●	●	●	●	●	●	●
Acetic acid, 5 %	●	●	●	●	●	●	●	●	●	●	●
Boric acid	●	●	●	●	●	●	●	●	●	●	●
Hydrochloric acid,, 37 %	●	●	●	●	●	●	●	●	●	●	●
Fluohydric acid, 50 %	●	●	●	●	●	●	●	●	●	●	●
Nitric acid, 25 %	●	●	●	●	●	●	●	●	●	●	●
Nitric acid, 65 %	●	●	●	●	●	●	●	●	●	●	●
Sulphuric acid, 25 %	●	●	●	●	●	●	●	●	●	●	●
Sulphuric acid, 98 %	●	●	●	●	●	-	●	●	●	●	●
Phosphoric acid, conc.	●	●	●	●	●	●	●	●	●	●	●
Bases (alkalis)											
Ammonia hydroxide, 1n	●	●	●	●	●	●	●	●	●	●	●
Potassium hydroxide, 3n	●	●	●	●	●	●	●	●	●	●	●
Sodium hydroxide, 3n	●	●	●	●	●	●	●	●	●	●	●
Sodium hydroxide, 6n	●	●	●	●	●	●	●	●	●	●	●
Sodium hydrate	●	●	●	●	●	●	●	●	●	●	●
Spirits and Solvents											
Aceton	●	●	●	●	●	●	●	●	●	●	●
Butanol	●	●	●	●	●	●	●	●	●	●	●
Ethanol	●	●	●	●	●	●	●	●	●	●	●
Isopropanol	●	●	●	●	●	●	●	●	●	●	●
Isobutanol	●	●	●	●	●	●	●	●	●	●	●
Methanol	●	●	●	●	●	●	●	●	●	●	●
Butyl acetate	●	●	●	●	●	●	●	●	●	●	●
Ethyl acetate	●	●	●	●	●	●	●	●	●	●	●
Methyl acetate	●	●	●	●	●	●	●	●	●	●	●
Isopropyl acetate	-	-	●	●	●	●	●	●	●	●	●
Diethyl ether	●	●	●	●	●	●	●	●	●	●	●
Dioxane	●	●	●	●	●	●	●	●	●	●	●
Isopropylester	-	-	-	●	●	●	●	●	●	●	●
Tetrahydrofuran	●	●	●	●	●	●	●	●	●	●	●
Ethylene glycol	●	●	●	●	●	●	●	●	●	●	●

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Glycerol	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Propylene glycol	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Benzene	🟡	🟡	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟡	🟢
Toluene	🟡	🟡	🟢	🟢	🟢	🟢	🟢	🔴	🟡	🟡	🟢
Xylene	🟡	🟡	🟡	🟢	🟢	🟢	🟢	🔴	🟡	🔴	🟢
Chloroform	🟡	🟡	🔴	🟢	🟡	🟢	🟢	🔴	🟢	🔴	🟢
Dichloromethane	🟡	🟡	🔴	🟢	🟢	🟢	🟢	🔴	🟡	🔴	🟢
Tetrachloroethylene	🟡	🟡	🟡	🟢	🟢	🟢	🟢	🔴	🟢	🔴	🟢
Trichlorethylene	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🔴	🟢	🔴	🟢
Dimethylformamide	🟡	🟡	🔴	🟢	🟢	🟢	🟢	🟡	🔴	🟢	🟢
Dimethylsulfoxide	🟢	🟡	🔴	🟢	🟢	🟢	🟢	🟡	🔴	🟡	🟢
Petrol	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🔴	🟢	🔴	🟢
Kerosine	🟡	🟡	🟢	🟢	🟢	🟢	🟢	🔴	🟢	🟡	🟢
Acetonitrile	🟡	🟡	🟢	🟢	🟢	🟢	🟢	🔴	🟢	🟡	🟢
Pyridine	🟡	🟡	🔴	🟢	🟡	🟢	🟢	🔴	🔴	🔴	🟢
Oils/Fats											
Vegetable oils	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Lubricants	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Gases/Air											
Inert gases, air, nitrogen, proteins	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Methane	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢

The following table can only be used as a reference; chemical stability can be affected by the process conditions.

Please, keep in mind the parameters, which can significantly degrade chemical stability if changed: temperature, time, concentration.

Sealing materials	Designation	Temperature limits	Main applications
Silicone rubber	Silicone	-50 °C to +250 °C	Food, neutral and slightly aggressive liquids, air, ozone.
Ethylene propylene rubber	EPDM	-30 °C to +150 °C	Alcohols, ketones, glycols, alkalis, acids.
Fluoroplastic	PTFE	-30 °C to +235 °C	Highly corrosive liquids and gases.
Fluorocarbon rubber	Viton	-21 °C to +200 °C	Acids, aromatic hydrocarbons, chlorinated hydrocarbons, fatty hydrocarbons, alcohols.
Nitrile rubber	Buna-N	-30 °C to +121 °C	Fatty hydrocarbons, alcohols, glycols, food liquids, salt solutions, liquids with low acid content, solutions of chlorides, nitrates and phosphates.