Instructions on the handling of syringe filters

1. Properties of filters in relation to the pore size:

cleaning operation	Pore size to be used (µm)
sterile filtration	0.20
through cleaning	0.45
clear filtration	1-2
pre-filtration	5.0

2. Relationship of filterable sample quantities to the filter diameter:

The following table gives you an overview of the approximate volumes of the liquids to be filtered which can be passed through a membrane of a defined diameter. Greater deviations from the specified average value may occur, depending on the particle charging of the liquid concerned.

Filter diameter (mm)	filtration volume (ml)
4	<1
13	1-10
25	10-100
30	>100 (or fast filtration)

3. 3. Manually generated maximum pressure in relation to syringe volume

In the case of solutions which are difficult to filter, high pressures may be necessary under certain circumstances, in order to force the relevant liquid through a filter.
The following table has been compiled in order to estimate the pressures required and determine the correspond-ing filters.

syringe volume (ml)	pressure bar / psi
1	10/150
3	7.0/100
5	5.0/75
10	3.5/50
20	2.0/30

Chemical compatibility list for filter membranes / housings

Chemicals	Nylon (PA)	PTFE	PVDF	CA	RC	PP	PC	PET	CME	CN	PES
ACIDS											
Acetic, Glacial	C	C	C	C	C	C	ND	C	NC	NC	C
Acetic, 25%	NC	C	C	NC	NC	C	C	C	LC	LC	C
Hydrochloric, concentrated	NC	C	C	NC	NC	C	C	NC	NC	NC	C
Sulfuric, Concentrated	NC	C	NC	NC	NC	C	NC	ND	NC	NC	NC
Sulfuric, 25%	NC	C	C	NC	LC	C	ND	ND	LC	NC	ND
Nitric Concentrated	NC	C	C	NC	NC	C	C	LC	NC	NC	NC
Nitric, 25%	NC	C	C	NC	NC	C	ND	ND	LC	LC	LC
Phosphoric, 25%	NC	C	ND	C	LC	C	ND	C	LC	ND	ND
Formic, 25%	NC	C	ND	LC	C	C	ND	LC	C	LC	C
Trichloroacetic, 10%	NC	C	ND	C	C	C	ND	ND	ND	ND	ND
ALKALIS											
Ammonium Hydroxide, 25%	C	C	LC	C	LC	C	NC	LC	LC	NC	C
Sodium Hydroxide, 3 Normal	C	C	C	NC	LC	C	NC	LC	NC	NC	C
ALCOHOLS											
Methanol, 98%	C	C	C	C	C	C	C	C	NC	NC	C
Ethanol, 98%	C	C	C	C	C	C	C	C	NC	NC	C
Ethanol, 70%	LC	C	C	LC	C	C	C	C	NC	NC	C
Isopropanol, n-Propanol	C	C	C	C	C	C	LC	C	C	C	C
Amyl alcohol, Butanol	C	C	C	C	C	C	ND	C	C	C	C
Benzyl alcohol	C	C	C	LC	C	C	LC	ND	LC	LC	NC
Ethylene glycol	C	C	C	C	C	C	C	C	LC	LC	C
Propylene glycol	C	C	C	LC	C	C	ND	ND	ND	ND	ND
Glycerol	C	C	C	C	C	C	ND	ND	C	ND	ND
HYDROCARBONS											
Hexane, Xylene	C	C	C	C	C	NC	C	C	C	C	C
Toluene, Benzene	C	C	C	C	C	NC	LC	C	C	C	C
Kerosene, Gasoline	C	C	C	C	C	LC	LC	C	C	C	C
Tetralin, Decalin	ND	C	C	C	C	ND	ND	ND	ND	ND	ND
HALOGENATED HYDROCARBONS											
Methylene Chloride	LC	C	C	NC	C	LC	ND	C	ND	LC	NC
Chloroform	C	C	C	NC	C	LC	NC	C	C	C	NC
Trichloroethylene	C	C	C	C	C	LC	ND	C	C	C	NC
Monochlorobenzene, Freon	C	C	C	C	C	C	C	ND	ND	C	C
Carbon Tetrachloride	C	C	C	LC	C	LC	LC	C	C	C	C
KETONES											
Acetone, Cyclohexanone	C	C	NC	NC	C	C	NC	C	NC	NC	NC
Methyl Ethyl Ketone	C	C	LC	LC	C	LC	LC	ND	ND	NC	NC
Isopropylacetone	C	C	NC	C	C N	D	ND	ND	ND	ND	NC
Methyl Isobutyl Ketone	ND	C	LC	ND	C	LC	ND	ND	ND	NC	C
ESTERS											
Ethyl Acetate & Methyl Acetate	C	C	C	NC	C	LC	LC	C	NC	NC	NC
Amyl, Propyl, & Butyl Acetate	C	C	ND	LC	C	LC	C	ND	ND	NC	C
Propylene Glycol Acetate	ND	C	ND	NC	C	C	ND	ND	ND	ND	ND
2-Ethoxyethyl Acetate	ND	C	ND	LC	C	ND	ND	ND	ND	ND	ND
Methyl Cellosolve Acetate	ND	C	ND	NC	C	C	ND	ND	ND	ND	ND
Benzyl Benzoate	C	C	ND	C	C	ND	ND	ND	ND	ND	ND
Isopropyl Myristate	C	C	ND	C	C	ND	ND	ND	ND	ND	ND
Tricresyl Phosphate	ND	C	ND	C	C	ND	ND	ND	ND	ND	ND
OXIDES – ETHERS											
Ethyl Ether	C	C	C	C	C	LC	C	C	LC	LC	C
Dioxane & Tetrahydrofuran	C	C	LC	NC	C	C	NC	PET	NC	NC	NC
Dimethylsulfoxide (DMSO)	C	C	NC	NC	C	C	NC	ND	NC	NC	NC
Isopropyl Ether	ND	C	C	C	C	C	C	ND	ND	LC	C
SOLVENTS WITH NITROGEN											
Dimethyl Formamide	LC	C	NC	NC	LC	C	ND	C	NC	NC	NC
Diethylacetamide	C	C	ND	NC	C	ND	ND	ND	ND	ND	ND
Triethanolamine	C	C	ND	C	C	ND	ND	ND	ND	ND	ND
Aniline	ND	C	ND	NC	C	ND	ND	ND	ND	ND	ND
Pyridine	C	C	C	NC	C	LC	NC	ND	NC	NC	NC
Chemicals	PA	PTFE	PVDF	CA	RC	PP	PC	PET	CME	CN	PES
MISCELLANEOUS											
Phenol, Aqueous, 10%	ND	C	LC	NC	NC	C	ND	ND	NC	LC	NC
Hydrogen Peroxide, 30%	C	C	ND	C	C	ND	ND	ND	ND	ND	ND
Silicone Oil & Mineral Oil	ND	C	C	C	C	C	C	C	C	C	C

C = Compatible
NC = Not Compatible
ND = No Data Available
LC = Limited Compatibility
PTFE = Teflon®
PVDF = Polyvinylidene fluoride
PS = Polyether sulphone
CA = cellulose acetate
RC = Regenerated Celluose
PP = Polypropylene
PC = Polycarbonate
CA = Celluloseacetate
CN = Cellulosenitrate
PA = Polyamide Nylon®
PET = Polyester
CME = Cellulose Mixed Ester