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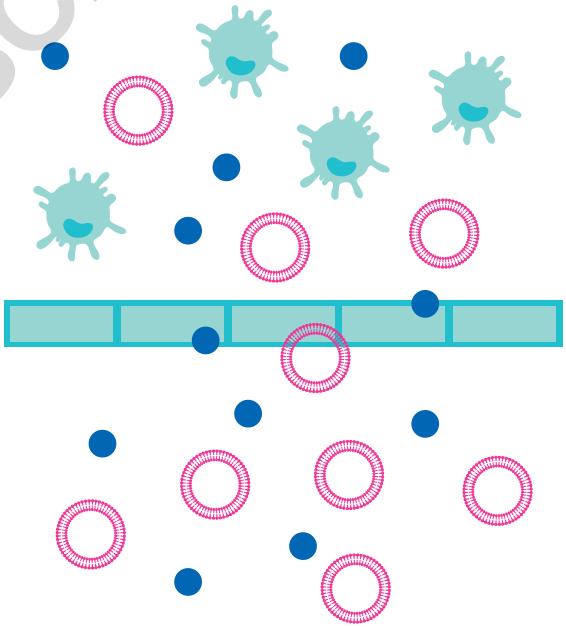
Data Sheet

Chemical Compatibility of Filter Components

Compatibility of materials used in the construction of our products

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The tables on the following pages contain recommendations based solely upon ratings found in several published solubility and compatibility tables. A listing of sources appears below. The tables do not contain results from any actual usage experiments conducted by our scientists.



Ratings for this table were made on the following basis:

R = Recommended. Chosen for only those polymer-solvent combinations that showed top ratings in the published compatibility tables.

GR = Generally Recommended. Where no polymer-solvent specific information was available, general compatibility with a solvent type was stated; e.g., PES is compatible with alcohols.

LTD = Limited. Chosen for those polymer-solvent combinations that showed both top and less-than-top ratings in published compatibility tables where exposure times of less than 24 hours at room temperature are recommended. Component materials may stress crack or swell affecting filtration efficiency.

NR = Not Recommended. Chosen for those polymer-solvent combinations that showed less-than-top ratings in the published compatibility tables.

References used in developing this table:

1. Polymer Handbook, ed III., Section VII p. 379-402 lists solvents and nonsolvents for a variety of polymers
2. Organic Polymer Chemistry, 2nd edition, K.J.Saunders, Chapman & Hall, 1988.
3. Appropriate sections in Encyclopedia of Polymer Science and Engineering
4. Chemical Resistance Guide for Elastomers, Compass Publications. Kenneth M.Pruett, 1988.
5. Compass Corrosion Guide II, Compass Publications. Kenneth M.Pruett, 1983.
6. http://www.pspglobal.com/nfvitongrades.html (Compatibility of vinylidiene fluoride-hexafluoropropylene copolymer)
7. http://www.pspglobal.com/nfmaterials.html (Compatibility of O-ring materials)
8. http://www.ab.ust.hk/sepo/tips/ch/ch004.htm (General polymer compatibility)
9. http://www.customadvanced.com/chemical-resistance-chart.html
10. Merck Index, 10th edition
11. Chapiro, Mankowski & Schmitt, J.Polymer Science: Chemistry edition, Vol.20, 1982, p. 1791-1796
12. Bottino, Capannelli, Munari & Turturro, J.Polymer Science: Polymer Physics, Vol 26, 1988, p. 785-94.
13. CRC Handbook of Polymer-Liquid Interaction Parameters and Solubility Parameters, Allan F.M. Barton, CRC Press, 1990.

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Caution

Please note the following:

1. These recommendations assume pure solutions at room temperature and pressure without applied stresses. Time of exposure is not considered. These are critical assumptions as polymer properties are strongly affected by environmental conditions, time, the presence of external stress and the presence of additives. It is not safe to assume that property changes are linearly related to changing temperature. A 10 °C increase in temperature, for example, may place the test conditions closer to the glass transition of the polymer, thus allowing greater penetration of solvent molecules. This has a plasticizing effect, further lowering the glass transition and resulting in a modulus drop of up to three orders of magnitude. The glass transition of nylons, for example, has been shown to range from below -50 °C to +70 °C depending upon their moisture content.

2. These recommendations assume that each polymer category has a uniform chemistry, molecular weight distribution and thermomechanical history. This assumption will never be true and, in some cases, variation has a distinct influence on compatibility. For example, solvent compatibility of cellulose esters is strongly dependent upon their degree of substitution (acetylation/nitration). Crystalline morphology and degree of crystallinity influences compatibility of semi-crystalline polymers and can vary significantly. Polyethyleneterephthalate, for example, can be quenched to obtained samples with almost no crystallinity or annealed to obtain samples with >50% crystallinity. The response time of these two polyesters, although chemically identical, will be quite different. The effect of molecular weight distribution and degree of branching on solvent compatibility can be seen by comparing the solvent compatibility of LDPE, LLDPE, HDPE and UPE. Such specific information concerning polymers evaluated does not accompany published compatibility tables.

3. The definition of solvent compatibility for our products differs from that used in determining the ratings given in published compatibility tables. Such tables are generally concerned with chemical attack and significant losses in strength and/or dimensional changes. A top designation, for example, might be designated for solvent-polymer combinations with <10% swelling, which is high. Other compatibility tables may make recommendations based upon dimensional change as a function of time. This is difficult to relate to a membrane that may respond almost immediately to immersion in solvent. In addition, solvent-membrane compatibility requires additional consideration of filtration-specific factors. None of these published compatibility guides, for example, monitors the solvent's ability to wet a membrane or increase extractables.

4. This table does not consider solvent safety issues.

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Chemical Compatibility

This table shows the chemical compatibility of materials used in the fabrication of our devices and membranes. Please refer to the specification tables on product-specific pages for materials found in our specific devices.

	Acetic Acid (glacial) acid, organic	Acetone ketone	Acetonitrile (ACN) nitrile	Alconox®, 1% surfactant/detergent	Ammonium Hydroxide caustic	Ammonium Sulfate (saturated) salt, aqueous solution	Amyl Acetate ester	Amyl Alcohol alcohol	Benzene HC, aromatic	Benzyl Alcohol HC aromatic/alcohol	Boric Acid (aqueous solution) acid, inorganic
Housing Materials											
HDPE (high density polyethylene)	R	R	R	TST	R	R	R	R	NR	NR	R
PP (polypropylene)	TST	R	R	ND	TST	R	TST	R	NR	TST	R
PS (polystyrene)	NR	NR	NR	ND	TST	ND	NR	GR	NR	ND	GR
PVC (polyvinyl chloride)	R	NR	NR	ND	TST	R	NR	R	NR	NR	R
MMA (modified acrylic copolymer)	NR	GNR	ND	ND	ND	GR	GNR	TST	NR	ND	TST
ABS (acrylonitrile-butadiene-styrene polymer)	GNR	TST	ND	ND	ND	ND	GNR	GR	GNR	ND	TST
SAN (styrene-acrylonitrile polymer)	ND	ND	ND	ND	ND	ND	ND	GR	GNR	ND	ND
PC (polycarbonate)	R	NR	NR	TST	NR	R	NR	R	NR	NR	GR
PET (polyethylene terephthalate)	NR	R	ND	ND	ND	R	TST	R	R	NR	R
EASTAR® (copolyester)	ND	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND
Filter Materials											
PP (polypropylene)	R	R	NR	ND	TST	R	TST	R	NR	R	R
PVC (polyvinyl chloride)	R	NR	NR	ND	TST	R	NR	R	NR	NR	R
PC (polycarbonate)	R	GNR	NR	R	TST	R	R	R	NR	TST	GR
PTFE (polytetrafluoroethylene)	R	R	R	TST	GR	GR	R	R	R	R	GR
PVDF (polyvinylidene fluoride)	R	NR	LTD	TST	R	NR	R	R	R	R	TST
MCE (mixed cellulose esters)	NR	NR	NR	TST	NR	NR	NR	NR	GR	NR	GR
PES (polyether sulfone)	R	GNR	NR	ND	NR	ND	GR	GR	NR	ND	GR
NYL (nylon)	NR	R	R	TST	TST	R	TST	TST	R	TST	R
O-ring Materials											
EPR (ethylene propylene rubber)	TST	R	R	ND	R	R	R	R	NR	R	R
Buna-N (nitrile rubber)	NR	NR	NR	ND	NR	R	NR	R	NR	R	TST
Fluoroelastomer (vinylidiene fluoride-hexafluoropropylene copolymer)	NR	NR	NR	ND	R	R	NR	R	R	R	R
Silicone (silicone)	R	R	NR	ND	R	R	NR	NR	NR	R	R
Filter Holder Material											
316 SS (stainless steel)	R	R	R	LTD	LTD	R	R	R	R	R	R

The following descriptions are abbreviated. Please see the beginning of this section for complete information.
R = Recommended; GR = Generally Recommended LTD = Limited Recommendation; NR = Not Recommended;
GNR = Generally Not Recommended; TST = Testing Recommended; ND = No Data Presently Available

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Chemical Compatibility

This table shows the chemical compatibility of materials used in the fabrication of our devices and membranes. Please refer to the specification tables on product-specific pages for materials found in our specific devices.

	Butyl Acetate ester	Butyl Alcohol alcohol	Carbon Tetrachloride HC, halogenated	Cellosolve (Ethyl) glycol ether	CHAPS (aqueous solution) surfactant/ detergent	Chloroform HC, halogenated	Cyclohexanone ketone	Diethyl Pyrocarbonate, 0.2% carboxylic anhydride	Dimethyl Sulfoxide (DMSO), sulfoxide	Dimethyl Sulfoxide (DMSO), sulfoxide	Dimethylformamide amide
Housing Materials											
HDPE (high density polyethylene)	R	R	NR	R	TST	LTD	R	ND	R	R	R
PP (polypropylene)	TST	R	NR	R	ND	NR	NR	ND	R	R	R
PS (polystyrene)	NR	R	NR	NR	ND	NR	NR	ND	R	NR	NR
PVC (polyvinyl chloride)	NR	R	NR	NR	ND	NR	NR	ND	NR	NR	NR
MMA (modified acrylic copolymer)	GNR	TST	NR	NR	ND	NR	GNR	ND	NR	ND	ND
ABS (acrylonitrile-butadiene-styrene polymer)	GNR	GR	ND	ND	ND	ND	TST	ND	NR	NR	NR
SAN (styrene-acrylonitrile polymer)	ND	GR	ND	ND	ND	ND	ND	ND	ND	ND	ND
PC (polycarbonate)	NR	R	NR	NR	TST	NR	NR	ND	NR	NR	NR
PET (polyethylene terephthalate)	R	R	R	ND	ND	R	R	ND	ND	ND	NR
EASTAR® (copolyester)	ND	ND	ND	R	ND	ND	NR	ND	ND	ND	ND
Filter Materials											
PP (polypropylene)	TST	R	TST	R	ND	TST	R	ND	R	R	R
PVC (polyvinyl chloride)	NR	R	NR	NR	ND	NR	NR	ND	NR	NR	NR
PC (polycarbonate)	R	R	TST	R	TST	NR	TST	ND	NR	TST	NR
PTFE (polytetrafluoroethylene)	GR	GR	GR	GR	TST	R	R	ND	R	GR	GR
PVDF (polyvinylidene fluoride)	TST	R	R	ND	ND	R	NR	TST	NR	NR	NR
MCE (mixed cellulose esters)	NR	R	R	NR	ND	R	NR	NR	NR	NR	NR
PES (polyether sulfone)	GNR	GR	GNR	GR	ND	GNR	GNR	ND	NR	NR	ND
NYL (nylon)	R	R	TST	R	TST	NR	R	ND	R	NR	R
O-ring Materials											
EPR (ethylene propylene rubber)	R	R	NR	R	ND	NR	TST	ND	NR	NR	NR
Buna-N (nitrile rubber)	NR	R	NR	NR	ND	NR	NR	ND	NR	NR	NR
Fluoroelastomer (vinylidiene fluoride-hexafluoropropylene copolymer)	NR	R	R	TST	TST	R	NR	ND	NR	NR	NR
Silicone (silicone)	NR	R	NR	NR	ND	NR	TST	ND	NR	R	R
Filter Holder Material											
316 SS (stainless steel)	R	R	R	LTD	LTD	R	R	R	NR	R	R

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DOMINIQUE DUTSCHER SAS

Chemical Compatibility

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	Dioxane ether	Ethers ether	Ethyl Acetate ester	Ethyl Alcohol alcohol	Ethylene Glycol glycol	Formaldehyde aldehyde	Formic Acid, 50% acid, organic	Freon® (TF or PCA) HC, halogenated	Gasoline HC	Glycerine (Glycerol) glycol	Guanidine Hydrochloride, 6 M salt, aqueous solution
Housing Materials											
HDPE (high density polyethylene)	R	R	R	R	R	R	R	R	LTD	R	GR
PP (polypropylene)	R	NR	TST	R	R	R	R	R	NR	R	ND
PS (polystyrene)	NR	NR	NR	TST	ND	NR	NR	NR	NR	R	ND
PVC (polyvinyl chloride)	NR	NR	NR	R	TST	TST	TST	NR	NR	R	ND
MMA (modified acrylic copolymer)	NR	TST	NR	TST	ND	ND	TST	ND	ND	ND	GR
ABS (acrylonitrile-butadiene-styrene polymer)	ND	ND	GNR	GR	ND	ND	ND	ND	ND	ND	ND
SAN (styrene-acrylonitrile polymer)	NR	ND	ND	GR	ND	ND	ND	ND	ND	ND	ND
PC (polycarbonate)	NR	NR	NR	TST	R	R	R	NR	NR	R	ND
PET (polyethylene terephthalate)	GR	NR	ND	R	R	R	NR	R	R	R	ND
EASTAR® (copolyester)	ND	ND	NR	R	ND	ND	ND	ND	ND	ND	ND
Filter Materials											
PP (polypropylene)	R	NR	TST	R	R	R	R	R	NR	R	ND
PVC (polyvinyl chloride)	NR	NR	NR	R	TST	TST	TST	NR	NR	R	ND
PC (polycarbonate)	NR	TST	TST	R	R	R	R	GR	R	R	R
PTFE (polytetrafluoroethylene)	NR	TST	TST	R	R	R	R	GR	R	R	R
PVDF (polyvinylidene fluoride)	R	R	R	R	R	R	R	R	R	R	ND
MCE (mixed cellulose esters)	NR	NR	NR	NR	NR	NR	ND	R	R	R	ND
PES (polyether sulfone)	ND	ND	GNR	GR	GR	ND	ND	ND	GR	GR	ND
NYL (nylon)	R	R	R	TST	R	R	NR	R	R	R	ND
O-ring Materials											
EPR (ethylene propylene rubber)	NR	NR	NR	R	R	R	R	NR	NR	R	TST
Buna-N (nitrile rubber)	NR	NR	NR	TST	R	TST	NR	R	R	R	NR
Fluoroelastomer (vinylidiene fluoride-hexafluoropropylene copolymer)	NR	NR	NR	R	R	NR	ND	GR	R	R	ND
Silicone (silicone)	NR	TST	NR	TST	R	R	GR	R	NR	R	ND
Filter Holder Material											
316 SS (stainless steel)	R	R	R	R	R	R	R	R	R	R	R

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Chemical Compatibility

This table shows the chemical compatibility of materials used in the fabrication of our devices and membranes. Please refer to the specification tables on product-specific pages for materials found in our specific devices.

	Guanidine Thiocyanate, 5 M salt, aqueous solution	Helium gas	Hexane HC, aliphatic	Hydrochloric Acid, 1 N (HCl) acid, inorganic	Hydrochloric Acid, 6 N (HCl) acid, inorganic	Hydrochloric Acid, conc. (HCl) acid, inorganic	Hydrofluoric Acid acid, inorganic	Hydrogen gas	Hydrogen Peroxide, 3% peroxide	Hydrogen Peroxide, 30% peroxide	Hydrogen Peroxide, 90% peroxide
Housing Materials											
HDPE (high density polyethylene)	GR	R	LTD	R	R	R	R	R	R	R	NR
PP (polypropylene)	ND	R	NR	GR	TST	NR	NR	R	R	TST	R
PS (polystyrene)	ND	ND	NR	R	TST	NR	NR	ND	R	R	R
PVC (polyvinyl chloride)	ND	ND	NR	GR	TST	NR	NR	R	R	TST	R
MMA (modified acrylic copolymer)	GR	ND	GR	GR	ND	ND	GNR	ND	ND	ND	ND
ABS (acrylonitrile-butadiene-styrene polymer)	ND	ND	GNR	GR	ND	ND	GNR	ND	ND	ND	ND
SAN (styrene-acrylonitrile polymer)	ND	ND	GR	ND	ND	ND	ND	ND	ND	ND	ND
PC (polycarbonate)	ND	R	NR	GR	TST	NR	NR	R	R	R	R
PET (polyethylene terephthalate)	ND	ND	R	GR	R	R	NR	R	R	R	R
EASTAR® (copolyester)	ND	ND	R	ND	ND	ND	ND	ND	ND	ND	ND
Filter Materials											
PP (polypropylene)	ND	R	NR	GR	TST	NR	NR	R	R	TST	R
PVC (polyvinyl chloride)	ND	ND	NR	GR	TST	NR	NR	R	R	TST	R
PC (polycarbonate)	R	R	R	R	R	R	TST	R	R	R	R
PTFE (polytetrafluoroethylene)	GR	R	R	R	R	R	R	R	R	R	R
PVDF (polyvinylidene fluoride)	ND	TST	R	R	TST	NR	NR	R	R	R	R
MCE (mixed cellulose esters)	ND	R	GR	GR	NR	GNR	NR	R	NR	NR	NR
PES (polyether sulfone)	ND	ND	GR	GR	GR	ND	NR	ND	ND	ND	ND
NYL (nylon)	ND	R	R	GR	TST	NR	NR	R	R	TST	NR
O-ring Materials											
EPR (ethylene propylene rubber)	TST	R	NR	NR	NR	NR	NR	R	R	R	NR
Buna-N (nitrile rubber)	NR	R	R	NR	NR	NR	NR	R	NR	NR	NR
Fluoroelastomer (vinylidiene fluoride-hexafluoropropylene copolymer)	ND	ND	R	GR	TST	NR	NR	R	R	R	R
Silicone (silicone)	ND	R	NR	GR	R	R	NR	NR	R	R	NR
Filter Holder Material											
316 SS (stainless steel)	R	R	R	R	R	NR	NR	R	R	R	R

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DOMINIQUE DUTSCHER SAS

Chemical Compatibility

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	HYPO (aqueous solution) salt, aqueous solution	Isobutyl Alcohol alcohol	Isopropyl Acetate ester	Isopropyl Alcohol alcohol	Kerosene HC	Lactic Acid, 50% acid, organic/alcohol	Lubrol® PX (aqueous solution) surfactant/detergent	Methyl Ethyl Ketone (MEK) ketone	Mercaptoethanol, 0.1 M alcohol/mercaptan	Methyl Acetate ester	Methyl Alcohol alcohol
Housing Materials											
HDPE (high density polyethylene)	R	R	R	R	LTD	TST	R	R	ND	TST	R
PP (polypropylene)	R	R	TST	R	TST	R	ND	R	ND	TST	R
PS (polystyrene)	ND	R	NR	R	NR	TST	ND	NR	ND	NR	NR
PVC (polyvinyl chloride)	R	TST	NR	TST	TST	TST	ND	NR	ND	NR	TST
MMA (modified acrylic copolymer)	GR	TST	GNR	TST	ND	ND	ND	GNR	ND	GNR	TST
ABS (acrylonitrile-butadiene-styrene polymer)	ND	GR	GNR	GR	ND	ND	ND	TST	ND	GNR	GR
SAN (styrene-acrylonitrile polymer)	ND	GR	ND	GR	ND	ND	ND	ND	ND	ND	GR
PC (polycarbonate)	R	R	NR	R	R	R	TST	NR	ND	NR	TST
PET (polyethylene terephthalate)	R	ND	R	R	TST	R	ND	R	ND	TST	ND
EASTAR® (copolyester)	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	R
Filter Materials											
PP (polypropylene)	R	R	TST	R	TST	R	ND	R	R	TST	R
PVC (polyvinyl chloride)	R	TST	NR	TST	TST	TST	ND	NR	ND	NR	TST
PC (polycarbonate)	R	R	R	R	R	R	TST	R	ND	NR	R
PTFE (polytetrafluoroethylene)	GR	R	R	R	LTD	GR	TST	R	ND	R	R
PVDF (polyvinylidene fluoride)	R	R	R	R	R	TST	ND	NR	ND	NR	R
MCE (mixed cellulose esters)	R	R	NR	NR	R	ND	ND	NR	NR	NR	NR
PES (polyether sulfone)	ND	GR	GNR	GR	GR	ND	ND	GNR	ND	GNR	GR
NYL (nylon)	R	TST	R	TST	R	TST	ND	R	ND	R	TST
O-ring Materials											
EPR (ethylene propylene rubber)	R	R	R	R	NR	R	ND	R	GR	R	R
Buna-N (nitrile rubber)	R	R	NR	R	R	R	TST	NR	NR	NR	R
Fluoroelastomer (vinylidiene fluoride-hexafluoropropylene copolymer)	R	R	NR	R	R	R	ND	NR	NR	NR	TST
Silicone (silicone)	R	R	NR	R	NR	R	ND	ND	ND	NR	R
Filter Holder Material											
316 SS (stainless steel)	R	R	R	R	R	R	R	R	R	R	R

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DOMINIQUE DUTSCHER SAS

Chemical Compatibility

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	Methylene Chloride HC, halogenated	Methyl Isobutyl Ketone ketone	Mineral Spirits HC	Nitric Acid, 6 N acid, inorganic	Nitric Acid (concentrated) acid, inorganic	Nitrobenzene HC, aromatic	Nitrogen gas	Nonidet-P40 (aqueous solution) surfactant/detergent	Ozone gas	Paraldehyde aldehyde	Pentane HC, aliphatic
Housing Materials											
HDPE (high density polyethylene)	LTD	R	NR	R	NR	R	ND	TST	TST	R	LTD
PP (polypropylene)	NR	NR	NR	TST	NR	NR	ND	ND	NR	TST	NR
PS (polystyrene)	NR	NR	NR	NR	NR	NR	ND	ND	ND	NR	NR
PVC (polyvinyl chloride)	NR	NR	NR	NR	NR	NR	R	ND	NR	TST	NR
MMA (modified acrylic copolymer)	NR	GNR	ND	ND	ND	NR	ND	ND	ND	ND	GR
ABS (acrylonitrile-butadiene-styrene polymer)	ND	TST	ND	ND	ND	GNR	ND	ND	ND	ND	GNR
SAN (styrene-acrylonitrile polymer)	NR	ND	ND	ND	ND	GNR	ND	ND	ND	ND	GR
PC (polycarbonate)	NR	NR	NR	TST	NR	NR	ND	TST	R	NR	NR
PET (polyethylene terephthalate)	NR	R	ND	R	NR	NR	ND	ND	R	ND	R
EASTAR® (copolyester)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	R
Filter Materials											
PP (polypropylene)	NR	NR	NR	TST	NR	NR	ND	ND	NR	TST	NR
PVC (polyvinyl chloride)	NR	NR	NR	NR	NR	NR	R	ND	NR	TST	NR
PC (polycarbonate)	NR	NR	R	R	R	TST	ND	TST	R	NR	R
PTFE (polytetrafluoroethylene)	R	R	R	R	ND	R	R	ND	GR	GR	GR
PVDF (polyvinylidene fluoride)	NR	NR	R	R	NR	R	R	ND	R	TST	GR
MCE (mixed cellulose esters)	NR	GNR	R	NR	GNR	GNR	R	ND	R	NR	GR
PES (polyether sulfone)	GNR	GNR	GR	R	ND	ND	ND	ND	ND	ND	GR
NYL (nylon)	TST	R	R	NR	NR	R	R	ND	NR	R	R
O-ring Materials											
EPR (ethylene propylene rubber)	NR	R	NR	TST	NR	NR	R	TST	TST	GR	NR
Buna-N (nitrile rubber)	NR	NR	R	NR	NR	NR	R	TST	NR	R	R
Fluoroelastomer (vinylidiene fluoride-hexafluoropropylene copolymer)	NR	NR	R	R	R	R	R	ND	NR	NR	GR
Silicone (silicone)	NR	NR	NR	NR	NR	NR	R	ND	NR	R	NR
Filter Holder Material											
316 SS (stainless steel)	R	R	R	R	NR	NR	R	LTD	NR	R	R

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DOMINIQUE DUTSCHER SAS

Chemical Compatibility

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	Petroleum Ether ether	Phenol (aqueous solution) phenol	Potassium Hydroxide, 3 N caustic	Pyridine amine	Silicone Oils silicone	Sodium Carbonate (aqueous solution) salt, aqueous solution	Water (Brine) salt, aqueous solution	Sodium Chloride (aqueous solution) salt, aqueous solution	Sodium Dodecyl Sulfate surfactant/ detergent	Sodium Hydroxide, 3 N caustic	Sodium Hydroxide (concentrated) caustic
Housing Materials											
HDPE (high density polyethylene)	LTD	NR	R	R	R	TST	R	R	TST	R	R
PP (polypropylene)	ND	NR	R	R	R	R	R	R	ND	R	R
PS (polystyrene)	ND	NR	R	NR	R	ND	ND	ND	ND	R	R
PVC (polyvinyl chloride)	GNR	NR	R	NR	R	R	R	R	ND	R	NR
MMA (modified acrylic copolymer)	ND	ND	ND	TST	ND	GR	GR	GR	ND	ND	ND
ABS (acrylonitrile-butadiene-styrene polymer)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SAN (styrene-acrylonitrile polymer)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PC (polycarbonate)	R	NR	TST	NR	R	R	R	R	TST	TST	NR
PET (polyethylene terephthalate)	R	GNR	R	NR	ND	TST	R	R	ND	TST	NR
EASTAR® (copolyester)	ND	ND	ND	ND	ND	ND	ND	ND	ND	R	ND
Filter Materials											
PP (polypropylene)	NR	NR	R	R	R	R	R	R	ND	R	R
PVC (polyvinyl chloride)	GNR	NR	R	NR	R	R	R	R	ND	R	NR
PC (polycarbonate)	R	NR	NR	NR	R	R	R	R	TST	NR	NR
PTFE (polytetrafluoroethylene)	GR	GR	R	GR	GR	R	R	R	ND	R	R
PVDF (polyvinylidene fluoride)	R	R	R	NR	R	R	R	R	ND	R	R
MCE (mixed cellulose esters)	R	NR	NR	NR	R	R	R	R	R	NR	NR
PES (polyether sulfone)	ND	ND	ND	NR	ND	ND	ND	ND	ND	R	R
NYL (nylon)	R	NR	R	TST	R	TST	R	R	ND	R	NR
O-ring Materials											
EPR (ethylene propylene rubber)	NR	R	R	NR	NR	R	R	R	TST	R	R
Buna-N (nitrile rubber)	R	NR	R	NR	R	R	R	R	GR	R	NR
Fluoroelastomer (vinylidiene fluoride-hexafluoropropylene copolymer)	R	R	R	NR	R	R	R	R	R	R	R
Silicone (silicone)	NR	NR	NR	NR	NR	R	R	R	R	R	R
Filter Holder Material											
316 SS (stainless steel)	R	R	R	R	R	R	LTD	R	LTD	R	NR

The following descriptions are abbreviated. Please see the beginning of this section for complete information.
R = Recommended; GR = Generally Recommended LTD = Limited Recommendation; NR = Not Recommended;
GNR = Generally Not Recommended; TST = Testing Recommended; ND = No Data Presently Available

DOMINIQUE DUTSCHER SAS

Chemical Compatibility

This table shows the chemical compatibility of materials used in the fabrication of our devices and membranes. Please refer to the specification tables on product-specific pages for materials found in our specific devices.

	Sulfuric Acid (concentrated) acid, inorganic	Tetrahydrofuran (THF) ether	Toluene HC, aromatic	TCA (aqueous solution) acid, organic	Trichloroethane HC, halogenated	Trichloroethylene HC, halogenated	Tween® 20 (aqueous solution) surfactant/detergent	Urea, 8 M salt, aqueous solution	Xylene HC, aromatic
Housing Materials									
HDPE (high density polyethylene)	R	R	LTD	R	LTD	NR	TST	R	LTD
PP (polypropylene)	NR	NR	NR	R	NR	NR	ND	R	NR
PS (polystyrene)	NR	NR	NR	ND	NR	NR	ND	R	NR
PVC (polyvinyl chloride)	NR	NR	NR	NR	NR	NR	ND	TST	NR
MMA (modified acrylic copolymer)	GNR	NR	NR	ND	GNR	GNR	ND	GR	NR
ABS (acrylonitrile-butadiene-styrene polymer)	NR	NR	GNR	ND	ND	ND	ND	ND	GNR
SAN (styrene-acrylonitrile polymer)	NR	ND	GNR	ND	ND	ND	ND	ND	GNR
PC (polycarbonate)	NR	NR	NR	TST	NR	NR	TST	NR	NR
PET (polyethylene terephthalate)	NR	R	ND	NR	TST	R	ND	R	NR
EASTAR® (copolyester)	ND	ND	NR	ND	ND	ND	ND	ND	ND
Filter Materials									
PP (polypropylene)	NR	NR	NR	R	NR	NR	ND	R	NR
PVC (polyvinyl chloride)	NR	NR	NR	NR	NR	NR	ND	TST	NR
PC (polycarbonate)	NR	TST	TST	TST	NR	NR	TST	NR	NR
PTFE (polytetrafluoroethylene)	R	GR	R	GR	R	R	R	GR	R
PVDF (polyvinylidene fluoride)	TST	NR	R	R	TST	R	TST	R	R
MCE (mixed cellulose esters)	NR	NR	GR	NR	NR	NR	R	R	GR
PES (polyether sulfone)	GNR	ND	R	ND	GNR	GNR	ND	ND	ND
NYL (nylon)	NR	R	R	TST	TST	TST	TST	R	R
O-ring Materials									
EPR (ethylene propylene rubber)	TST	NR	NR	NR	NR	NR	TST	R	NR
Buna-N (nitrile rubber)	NR	NR	NR	NR	NR	NR	R	R	NR
Fluoroelastomer (vinylidiene fluoride-hexafluoropropylene copolymer)	R	NR	R	NR	R	R	R	R	R
Silicone (silicone)	NR	NR	NR	NR	NR	NR	NR	R	NR
Filter Holder Material									
316 SS (stainless steel)	NR	NR	R	NR	R	R	R	R	R

The following descriptions are abbreviated. Please see the beginning of this section for complete information.
R = Recommended; GR = Generally Recommended LTD = Limited Recommendation; NR = Not Recommended;
GNR = Generally Not Recommended; TST = Testing Recommended; ND = No Data Presently Available

DOMINIQUE DUTSCHER SAS

Chemical Compatibility of Ultrafiltration Products and Centrifugal Filters

This table reflects the chemical compatibility of materials used in the fabrication of our devices.
Please refer to the specification tables on product-specific pages for materials found in our specific devices.

	Microcon® Ultracel® Regenerated Cellulose (RC) Filter	Microcon® Biomax® PES Filter	Centriprep® Filter	Centricon® Plus-70 Filter	Amicon® Ultra Filter	Ultrafree® MC/CL with PVDF Membrane	Ultrafiltration Disc (Ultracel® RC Membrane)	Ultrafiltration Disc (Biomax® PES Membrane)	Stirred Cells
Solvents									
Acetone	NR	NR	NR	R	ND	NR	R	NR	NR
Acetonitrile	NR	NR	NR	R	ND	R	R	R	R
Acetonitrile (10%)	R	TST	R	R	R	R	R	R	R
Acetonitrile (40% in 1% TFA)	TST	R	TST	R	ND	TST	R	R	R
Alconox® (1%)	R	R	R	R	ND	R	R	R	R
Ammonium Acetate	R	R	R	R	ND	R	R	R	R
Ammonium Sulfate (50%)	R	R	R	R	R	R	R	R	R
Ammonium Sulfate	R	R	R	R	R	R	R	R	R
Amyl Alcohol	NR	NR	NR	R	ND	R	R	R	R
Benzyl Alcohol (1%)	R	R	R	R	ND	R	R	R	R
n-Butanol	NR	GR	NR	TST	ND	TST	TST	TST	TST
CAPS (250 mM, pH 11)	R	R	R	R	ND	TST	R	R	R
CHAPS (100 mM)	R	R	R	R	ND	R	R	R	R
Decon-90 (1%)	R	R	R	R	ND	R	R	R	R
Diethyl Pyrocarbonate (DEPC, 0.2%)	R	R	R	R	R	R	R	R	R
Digitonin (0.5%) in EtOH	R	R	R	R	ND	R	R	R	R
Dimethylacetamide	NR	NR	NR	TST	ND	NR	TST	NR	NR
Dimethylformamide	NR	GR	NR	TST	ND	NR	TST	NR	NR
Dimethylformamide (10%)	R	GR	R	R	R	R	R	R	R
Dioxane	NR	NR	NR	TST	ND	TST	TST	TST	TST
Dioxane (10%)	R	R	R	R	ND	R	R	R	R
Dithiothreitol (0.1M)	TST	TST	R	R	R	R	R	R	R
DMSO (10%)	R	GR	R	R	ND	R	R	R	R
DMSO	NR	NR	NR	TST	ND	NR	TST	NR	NR
DTT/Benzamidine HCl (1 mM each)	R	R	R	R	ND	R	R	R	R
Ethanol	TST	TST	NR	TST	ND	TST	TST	TST	TST
Ethanol (10%)	R	R	R	R	R	R	R	R	R
Ethylene Glycol	NR	NR	NR	TST	ND	TST	TST	TST	TST
Ethylene Glycol (10%)	R	R	R	R	ND	R	R	R	R
Formaldehyde (5%)	R	R	R	R	R	R	R	R	R
Formamide	NR	NR	NR	TST	ND	NR	TST	NR	NR
Glycerine (Glycerol)	R	R	R	R	R	R	R	R	R
Guanidine HCl (6 M)	R	R	R	R	R	R	R	R	R
Guanidine Thiocyanate (0.5 M)	R	R	R	R	ND	R	R	R	R
Guanidine Thiocyanate (5 M)	NR	NR	NR	R	ND	NR	R	R	R

The following descriptions are abbreviated. Please see the beginning of this section for complete information.
R = Recommended; NR = Not Recommended; TST = Testing Recommended; ND = No Data Presently Available

DOMINIQUE DUTSCHER SAS

Chemical Compatibility of Ultrafiltration Products and Centrifugal Filters

This table reflects the chemical compatibility of materials used in the fabrication of our devices.
Please refer to the specification tables on product-specific pages for materials found in our specific devices.

	Microcon® Ultracel® Regenerated Cellulose Filter	Microcon® Biomax® PES Filter	Centriprep® Filter	Centricon® Plus-70 Filter	Amicon® Ultra Filter	Ultrafree® MC/CL with PVDF Membrane	Ultrafiltration Disc (Ultracel® RC Membrane)	Ultrafiltration Disc (Biomax® PES Membrane)	Stirred Cells
Solvents									
Glycerine (Glycerol)	R	R	R	R	R	R	R	R	R
Guanidine HCl (6 M)	R	R	R	R	R	R	R	R	R
Guanidine Thiocyanate (0.5 M)	R	R	R	R	ND	R	R	R	R
Guanidine Thiocyanate (5 M)	NR	NR	NR	R	ND	NR	R	R	R
Hydrogen Peroxide (3%)	R	R	R	R	ND	R	R	R	R
Hydrogen Peroxide/MeOH (1:3)	NR	NR	NR	TST	ND	TST	TST	TST	TST
Hydroxylamine (2 M)	R	R	R	R	ND	R	R	R	R
Imidazole (100 mM)	R	R	R	R	ND	R	R	R	R
Imidazole (300 mM)	R	R	R	R	ND	R	R	R	R
Isoamyl Alcohol (≤ 1%)	*NR	TST	ND	ND	ND	ND	ND	ND	ND
Isobutyl Alcohol	NR	NR	NR	TST	ND	NR	TST	TST	TST
Isopropyl Alcohol	NR	NR	NR	TST	ND	NR	TST	TST	TST
Isopropyl Alcohol (10%)	R	R	R	R	ND	R	R	R	R
Lubrol® PX (0.1%)	R	TST	R	R	ND	R	R	R	R
Mercaptoethanol (0.1 M)	R	R	R	R	R	R	R	R	R
Methanol	NR	NR	NR	TST	ND	NR	TST	TST	TST
Methanol (10%)	R	R	R	R	R	R	R	R	R
Nonidet P-40 (2%)	R	R	R	R	R	TST	R	R	R
Paraldehyde	TST	NR	TST	R	ND	R	R	R	R
Phenol (5%)	R	TST	R	R	ND	R	R	R	R
Phosphate Buffer (1 M, pH 8.2)	R	R	R	R	R	R	R	R	R
Polyethylene Glycol (10%)	R	R	R	R	R	R	R	R	R
Propanol	NR	NR	NR	TST	ND	NR	TST	NR	NR
Propanol (10%)	R	R	R	R	R	R	R	R	R
Sodium Carbonate (20%)	R	R	R	R	R	R	R	R	R
Sodium Cholate	R	R	R	R	ND	R	R	R	R
Sodium Chloride (2 M)	R	R	R	R	ND	R	R	R	R
Sodium Deoxycholate (5%)	R	R	R	R	R	R	R	R	R
Sodium Dodecyl Sulfate (3%)	R	R	R	R	ND	R	R	R	R
Sodium Dodecyl Sulfate (2%)	R	R	R	R	ND	R	R	R	R
Sodium Dodecyl Sulfate (0.1 M)	R	R	R	R	ND	R	R	R	R
Sodium Thiocyanate (3 M)	TST	R	TST	R	ND	R	R	R	R
Terg-A-Zyme® detergent (1%)	R	R	R	R	R	R	R	R	R
Tetrahydrofuran	NR	NR	NR	TST	ND	NR	TST	NR	NR

The following descriptions are abbreviated. Please see the beginning of this section for complete information.
R = Recommended; NR = Not Recommended; TST = Testing Recommended; ND = No Data Presently Available

*10 kDa and 30 kDa units are not compatible and not recommended, other kDa's may have limited compatibility so TST is recommended.

DOMINIQUE DUTSCHER SAS

Chemical Compatibility of Ultrafiltration Products and Centrifugal Filters

This table reflects the chemical compatibility of materials used in the fabrication of our devices.
Please refer to the specification tables on product-specific pages for materials found in our specific devices.

	Microcon® Ultracel® Regenerated Cellulose Filter	Microcon® Biomax® PES Filter	Centriprep® Filter	Centricon® Plus-70 Filter	Amicon® Ultra Filter	Ultrafree® MC/CL with PVDF Membrane	Ultrafiltration Disc (Ultracel® RC Membrane)	Ultrafiltration Disc (Biomax® PES Membrane)	Stirred Cells
Solvents									
Triethylamine (2%)	R	R	R	R	ND	R	R	R	R
Tris Buffer (1 M, pH 8.2)	R	R	R	R	R	R	R	R	R
Triton® X-100 (5 mM)	R	R	R	R	R	R	R	R	R
Tween® 20 (0.1%)	R	GR	R	R	R	R	R	R	R
Urea (8 M)	R	NR	R	R	R	R	R	R	R
Acids									
Acetic Acid, 10%	R	R	R	R	R	R	R	R	R
Acetic Acid (glacial)	NR	NR	NR	NR	ND	R	NR	TST	TST
Boric Acid	R	GR	R	R	ND	R	R	R	R
Formic Acid (5%)	R	R	R	R	R	R	R	R	R
Formic Acid (70%)	NR	NR	NR	NR	ND	R	NR	R	R
Hydrochloric Acid (1.0 N)	R	GR	R	R	R	R	NR	R	R
Lactic Acid (50%)	R	R	R	R	R	R	R	R	R
Nitric Acid (10%)	R	R	R	R	TST	R	R	R	R
Perchloric Acid (5%)	TST	TST	TST	R	ND	TST	R	R	R
Phosphoric Acid (5%)	R	R	R	R	R	R	R	R	R
Sulfamic Acid (3%)	R	R	R	R	ND	R	R	R	R
Sulfuric Acid (3%)	R	R	R	R	R	R	R	R	R
Trichloroacetic Acid (10%)	R	R	R	R	R	R	R	R	R
Trichloroacetic Acid (50%)	NR	NR	NR	NR	ND	NR	R	NR	TST
Trifluoroacetic Acid (10%)	R	R	R	R	R	R	R	R	R
Trifluoroacetic Acid (50%)	NR	NR	R	NR	TST	NR	R	NR	TST
Bases									
Ammonium Hydroxide (5%)	R	R	R	R	R	R	R	R	R
Ammonium Hydroxide (6 N)	R	R	R	R	ND	R	R	R	R
Sodium Hydroxide (0.1 N)	GR	R	GR	GR	GR	R	GR	R	R
Sodium Hydroxide (1 N)	NR	R	NR	NR	NR	R	NR	R	R
Sodium Hydroxide (2.5 N)	NR	NR	R	R	ND	R	NR	R	NR
Gases									
Helium	ND	GR	ND	ND	ND	ND	ND	ND	ND
Nitrogen	ND	GR	ND	ND	ND	ND	ND	ND	R
Ozone	ND	NR	ND	ND	ND	ND	ND	ND	ND
Hydrogen	ND	NR	ND	ND	ND	ND	ND	ND	ND
Air, compressed	ND	R	ND	ND	ND	ND	ND	ND	**R

The following descriptions are abbreviated. Please see the beginning of this section for complete information.
R = Recommended; NR = Not Recommended; TST = Testing Recommended; ND = No Data Presently Available

**With sensitive solutions, compressed air can cause large pH shifts, due to dissolution of carbon dioxide. Oxidation may also occur.

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Chemical Compatibility Guide for MultiScreen® Filter Plates

Ratings are based on 100% or concentrated solutions, unless otherwise indicated. Aromatic hydrocarbons (especially ketones, DMF, DMAC, DMSO, THF, acetonitrile) and chlorinated hydrocarbons will attack both membranes and plastics. A chemical listed as NR may be suitable in low concentrations for short exposures, but this must be determined on an individual assay basis.

Compatibility of MultiScreen®$_{HTS}$ and MultiScreen® Classic Filter Plates with Various Reagents

Plate Material/Membrane	Polyolefin copolymer/PTFE	Acrylic or Classic Styrene/ Durapore® PVDF membrane	Acrylic or Styrene/MCE membranes	Barex®/TiO_2/ Durapore® PVDF and MCE membrane	Acrylic or Barex®/ TiO_2/Styrene, Immobilon®-P membrane
Acids					
Acetic (5%)	R	R	R	R	R
Acetic, Glacial	R	L to NR	NR	R/L to NR	L
Boric	R	R	R	R	R
Trichloroacetic (<20%)	R	R	R	R	R
Trichloroacetic (20 to 40%)	R	R	L	R/L to NR	L
Trichloroacetic (>40%)	R	L to NR	NR	L/NR	NR
Hydrochloric (0.1 N)	R	R	R	R	R
Hydrochloric (1 N)	R	R	L to NR	R/L to NR	R to L
Hydrochloric (>1 N)	R	R	NR	R/L to NR	R
Hydrofluoric	R	R (20% max.)	NR	NR	R (20% max.)
Nitric (conc)	R	L to NR	NR	NR	L
Sulfuric (conc)	R	L	NR	L/NR	L
Bases					
NH4OH (6 N)	R	L to NR	NR	L to NR	R
NaOH (0.1 N)	R	R to L	L to NR	R/L to NR	R
NaOH (1 N)	R	L to NR	NR	L/NR	L
NaOH (>6 N)	R	NR	NR	NR	NR
Urea	R	R	—	R/NR	R
Triethylamine	R	R	R	R	R
Diethanolamine (≤3 mol)	R	R	R	R	R
Alcohols					
Amyl	R	R	NR	R/NR	R
Benzyl (1%)	R	R	R	R	R
Butyl	R	R	R	R	R
Ethanol (40%)	R	R	NR	R	R
Ethanol (≥50%)	R	R	NR	R/NR	R (no filtrate collection)
Isobutyl	R	R	R	R	R
Isopropyl	R	R	L to NR	R/L to NR	R
Methanol	R	R to L	NR	R/NR	R
Triton® X-100 Surfactant (<1%)[2]	R	R	R	R	R

R = Recommended, no known restrictions, NR = Not recommended, membrane or plate severely attacked by chemical,
L = Limited, chemical resistance marginal, short time exposures should be tested individually for application.
Dilution with water or other non-solvent will likely enhance compatibility

1. Scintillants should only be used with Barex® or SAN plates.
2. Surfactants are in general readily usable with all MultiScreen® plate types. However, before quantitative fluid transfer to a receiver plate, it is essential that the plate be rinsed with non-surfactant containing fluid (e.g., 100 µL PBS) and then the underdrain be thoroughly blotted prior to adding the material which will ultimately be collected. Triton®-X 100 should not be used with MCE membrane in concentrations greater than 5% (the membrane will appear to lose flow).

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Compatibility of MultiScreen®$_{HTS}$ and MultiScreen® Classic Filter Plates with Various Reagents

Plate Material/Membrane	Polyolefin copolymer/PTFE	Acrylic or Classic Styrene/ Durapore® membrane	Acrylic or Styrene/MCE	Barex®/TiO_2/ Durapore®, MCE, DEAE	Acrylic or Barex®/ TiO_2/Styrene, Immobilon®-P
Solvents					
Acetone	R	NR	NR	NR	NR
Acetonitrile (no filtrate collection, centrifuge)	R	NR	NR	NR	L (<35%)
Amyl Acetate	R	NR	NR	R/NR	R
Carbon Tetrachloride	R	L to NR	L to NR	R	R
Chloroform	R	NR	NR	NR	NR
Cyclohexanone	R	NR to L	NR to L	R/ NR to L	NR to L
DMAC	R	NR	NR	NR	NR
DMF	R	NR	NR	NR	NR
DMSO (no filtrate collection)	R	L (70%)	NR	NR	L (10%) max.
Ethylene Glycol	R	R	R	R	R
Formaldehyde	R	R (10% max.)	NR	R (<40%) /NR	R (<40%)
Hexane	NR	R	R	R	R
Methylene Chloride	L	NR	NR	NR	NR
MEK	R	NR	NR	NR	NR
MIBK	R	NR	NR	L/NR	NR/L
Phenol (5%)	R	L to NR	L to NR	R	R
Pyridine	R	R	R	R	R
Scintillants	NR	NR	NR	R	NR/R[1]
Triethylamine	R	R	R	R	R
Toluene	NR	NR to L	NR to L	R	NR to L/R
THF	R	NR	NR	L/NR	NR/L
Xylene	R	NR	NR	R	R
Other Organics					
Attophos® Reagent	R	R	R	R	R
Fluorescein	R	R	R	R	R
Glycerine	R	R	R	R	R
Hydrogen Peroxide	R	R	NR	R (3%)	R
Polyethylene Glycol	R	R	R	R	R
Tween® Surfactant (<5%)[2]	R	R	R	R	R
Triton® X-100 Surfactant (<1%)[2]	R	R	R	R	R
Triton® X-100 Surfactant (<5%)[2]	R	R	L	R/L	R
Inorganic Salts					
Carbon Disulfite	R	NR	NR	NR	NR
Sodium Hypochlorite	R	R	NR	R (5%)/ NR	R

R = Recommended, no known restrictions, NR = Not recommended, membrane or plate severely attacked by chemical,
L = Limited, chemical resistance marginal, short time exposures should be tested individually for application.
Dilution with water or other non-solvent will likely enhance compatibility

1. Scintillants should only be used with Barex® or SAN plates.

2. Surfactants are in general readily usable with all MultiScreen® plate types. However, before quantitative fluid transfer to a receiver plate, it is essential that the plate be rinsed with non-surfactant containing fluid (e.g., 100 µL PBS) and then the underdrain be thoroughly blotted prior to adding the material which will ultimately be collected. Triton®-X 100 should not be used with MCE membrane in concentrations greater than 5% (the membrane will appear to lose flow).

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Chemical Compatibility Guide for the MultiScreen® Vacuum Manifold

The following tables outline the solvents that have been evaluated for compatibility with the various components of the MultiScreen® vacuum manifold. In general the manifold will tolerate the same chemicals as the rest of the system.

However, when using concentrated acids, it is important to rinse through the entire manifold at the end of procedures, especially if collection is done through the manifold into a trap, rather than using the collection trays.

MultiScreen®$_{HTS}$ Vacuum Manifold Components

Component	Manifold Base/ Collar Gasket Frame	Gaskets/Tubing	Standard Collar	Support Grid	Tubing Fittings	Droplet Trap Array
Materials of Construction	**HDPE/ Polypropylene, Polyolefin**	**Silicone**	**Nylon**	**Stainless Steel**	**PP with EPDM or Fluoroelastomer Seals**	**PTFE**
Acetone	R	G	G	E	G	E
Acetonitrile	E	G	E	E	G	E
Dimethyl Formamide (DMF)	E	G	R	E	G	E
Dimethyl Sulfoxide (DMSO)	E	G	E	E	G	E
Ethyl Acetate	E	G	E	E	G	E
Ethanol	E	G	G	E	E	E
Formic Acid	E	G	NR	G	G	R
Hexane	NR	NR	R	E	G	E
Hydrochloric Acid (37%)	E	R	NR	R	R	R
Isopropanol	E	E	R	E	E	E
Methanol	E	E	R	E	E	E
Methylene Chloride	NR	NR	R	E	R	E
Sodium Hypochlorite	E	G	NR	G	G	R
Tetrahydrofuran (THF)	R	NR	E	E	NR	E
Toluene	NR	NR	E	E	R	E
Trichloroacetic Acid (TCA)	E	NR	G	G	R	R
Trifluoroacetic Acid (TFA)	E	NR	R	R	G	R

E = Excellent performance, G = Good performance, R = Rinse after contact, NR = Not recommended

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