
DOMINIQUE DUTSCHER SAS

Minisart® Standard Syringe Filters with MBS Housing

Specifications

Minisart® High Flow | NML | NML Plus with 28 mm accessible membrane filtration area diameter, ≤ 150 µL hold-up volume[1]
Minisart® HY | Acticosart with 26 mm accessible membrane filtration area diameter, ≤ 150 µL hold-up volume[1]
Minisart® Air with 15 mm accessible membrane filtration area diameter, ≤ 100 µL hold-up volume[1]

Housing material	Methacrylate butadiene styrene (MBS)
Membranes	High Flow: PES = Polyethersulfone NML: (SF) CA = (Surfactant-free) Cellulose Acetate NML Plus: (SF) CA = (Surfactant-free) Cellulose Acetate HY	Acticosart	Air: Hydrophobic PTFE = Polytetrafluoroethylene
Glass fiber prefilter	NML Plus: Binder-free GF, 0.7 µm particle retention
Max. operating pressure	High Flow: 6.0 bar	87 psi NML, NML Plus, HY, Air: 4.5 bar	65 psi Acticosart: 1 bar	14.5 psi
Housing burst pressure	≥ 7 bar	102 psi (not determined for Acticosart)
Max. temperature	60 °C
Sterilization	Non-sterile Minisart® High Flow, NML and NML Plus can be or sterilized by ethylene oxide (EO) or by gamma irradiation. Non-sterile Minisart® HY, Acticosart, Air* can be sterilized by ethylene oxide (EO).

Minisart® Membrane Types	**PES 0.1 µm**	**PES 0.22 µm**	**PES 0.45 µm**	**SFCA 0.2 µm**	**SFCA 0.45 µm**	**CA 0.65 µm**	**CA 0.8 µm**	**CA 1.2 µm**	**CA 5.0 µm**
Non-sterile packages: 500 (Q, HYQ), 1000 (R), sterile packs: individually packaged: 50 (K, GUK, HYK, HNK)	K	K | GUK | Q	K | GUK | Q	K | GUK | Q	K | GUK | Q	K	K | GUK | Q	K | Q	K | Q
Bubble point (≥)	With water 5.0 bar | 73 psi	With water 3.2 bar | 46 psi	With water 2.0 bar | 29 psi	With water 3.2 bar | 46 psi	With water 2.0 bar | 29 psi	With water 1.3 bar | 19 psi	With water 0.8 bar | 12 psi	With water 0.7 bar | 10 psi	With water 0.4 bar | 6 psi
Flow Rate for[2 | 3] (≥ mL/min)									
28 mm Ø for water at 1 bar	40	140	220	60	160	250	400	500	600
15 mm Ø for air at 0.1 bar	–	–	–	–	–	–	–	–	–
26 mm Ø for air at 0.1 bar	–	–	–	–	–	–	–	–	–
Water penetration point[3] (≥)	–	–	–	–	–	–	–	–	–
Sterile filtration capability[4] acc. to the bacteria challenge test	Yes	Yes	No	Yes	No	No	No	No	No
Non-pyrogenic according to the USP	Yes[5]	Yes[5]	Yes[5]	Yes[5]	Yes[5]	Yes[5]	Yes[5]	Yes[5]	Yes[5]

DOMINIQUE DUTSCHER SAS

Minisart® Membrane Types	GF+SFCA 0.2 µm	GF+SFCA 0.45 µm	GF+CA 1.2 µm	GF 0.7 µm	PTFE 0.2 µm	PTFE 1.0 µm	Acticosart	PTFE (Air) 0.2 µm
Non-sterile packages: 500 (Q, HYQ), 1000 (R), sterile packs: individually packaged, 50 (K, GUK, HYK, HNK)	K | Q	K | Q	Q	K | Q	K | Q	HYQ	Q	Q | HNK
Bubble point (≥)	With water 3.2 bar | 46 psi	With water 2.0 bar | 29 psi	With water 0.7 bar | 10 psi	With water 0.5 bar | 7 psi	With ethanol 1.1 bar | 20 psi	With ethanol 0.5 bar | 7 psi	With ethanol 0.9 bar | 13 psi	With ethanol 1.0 bar | 14 psi
Flow rate for [2] [3] (≥ mL/min)								
28 mm Ø for water at 1 bar	60	160	350	450	–	–	–	–
15 mm Ø for air at 0.1 bar	–	–	–	–	–	–	–	800
26 mm Ø for air at 0.1 bar	–	–	–	–	2,000	4,000	2,300	–
Water penetration point[3] (≥)	–	–	–	–	4.0 bar | 58 psi	1.5 bar | 22 psi	N.a.	3.2 bar | 44 psi
Sterile filtration capability[4] according to the bacteria challenge test	Yes	No	No	No	Yes	No	N.a.	Yes
Non-pyrogenic according to the USP					Yes[5]			

[1] Hold-up volume after air purge
[2] Hydrophilic membranes can filter dry air or gas but become impermeable to air or gas when wetted!
[3] Hydrophobic membranes cannot be wetted with aqueous solutions unless you overcome their water penetration point.
[4] According to bacterial challenge test (BCT) with 1×10^7 cfu/cm² Brevundimonas diminuta. All non-sterile Minisart® types listed above can be sterilized according to the method recommended in this table.
[5] For sterile packs K | GUK
*Minisart® Air can be sterilized by Gamma irradiation according to the following parameters: Range 25 – 40 kGy (validated with 50 kGy).

Minisart® Standard Syringe Filters are intended for general laboratory use and not for use in medical applications

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Preparation of Aqueous Liquids

Ordering Information

Minisart® High Flow (PES – Polyethersulfone)

Ø in mm | EFA[1]	Membrane	Housing	Pore Size	Connector Outlet	Color | Printing	Sterile*	Qty./Pkg.	Order No.
28 mm	PES	MBS	0.1 µm	Male Luer Lock	Dark Red	Yes	50	16553----------K
28 mm	PES	MBS	0.22 µm	Male Luer Lock	Royal Blue	Yes#	50	16532--------GUK
28 mm	PES	MBS	0.22 µm	Male Luer Lock	Royal Blue	Yes	50	16532----------K
28 mm	PES	MBS	0.22 µm	Male Luer Slip	Royal Blue	Yes	50	16541----------K
28 mm	PES	MBS	0.22 µm	Male Luer Lock	Royal Blue	No	500	16532----------Q
28 mm	PES	MBS	0.22 µm	Male Luer Slip	Royal Blue	No	500	16541----------Q
28 mm	PES	MBS	0.45 µm	Male Luer Lock	Amber	Yes	50	16537----------K
28 mm	PES	MBS	0.45 µm	Male Luer Lock	Amber	No	500	16537----------Q
28 mm	PES	MBS	0.45 µm	Male Luer Slip	Amber	Yes#	50	16533--------GUK
28 mm	PES	MBS	0.45 µm	Male Luer Slip	Amber	Yes	50	16533----------K
28 mm	PES	MBS	0.45 µm	Male Luer Slip	Amber	No	500	16533----------Q

Minisart® NML ((SF)CA – (Surfactant-free) Cellulose Acetate)

28 mm	SFCA	MBS	0.2 µm	Male Luer Lock	Blue	Yes	50	S6534------FMOSK
28 mm	SFCA	MBS	0.2 µm	Male Luer Lock	Blue	Yes#	50	S6534------FMGUK
28 mm	SFCA	MBS	0.2 µm	Male Luer Lock	Blue	No	500	S6534------FM--Q
28 mm	SFCA	MBS	0.2 µm	Male Luer Slip	Blue	Yes	50	S7597------FXOSK
28 mm	SFCA	MBS	0.2 µm	Male Luer Slip	Blue	No	500	S7597------FX--Q
28 mm	SFCA	MBS	0.45 µm	Male Luer Lock	Yellow	Yes	50	S6555------FMOSK
28 mm	SFCA	MBS	0.45 µm	Male Luer Lock	Yellow	Yes#	50	S6555------FMGUK
28 mm	SFCA	MBS	0.45 µm	Male Luer Lock	Yellow	No	500	S6555------FM--Q
28 mm	SFCA	MBS	0.45 µm	Male Luer Slip	Yellow	Yes	50	S7598------FXOSK
28 mm	SFCA	MBS	0.45 µm	Male Luer Slip	Yellow	No	500	S7598------FX--Q
28 mm	CA	MBS	0.65 µm	Male Luer Slip	Pink	Yes	50	16569----------K
28 mm	CA	MBS	0.8 µm	Male Luer Lock	Green	Yes	50	16592----------K
28 mm	CA	MBS	0.8 µm	Male Luer Lock	Green	Yes#	50	16592--------GUK
28 mm	CA	MBS	0.8 µm	Male Luer Lock	Green	No	500	16592----------Q
28 mm	CA	MBS	1.2 µm	Male Luer Lock	Red	Yes	50	17593----------K
28 mm	CA	MBS	1.2 µm	Male Luer Lock	Red	No	500	17593----------Q
28 mm	CA	MBS	5 µm	Male Luer Lock	Brown	Yes	50	S7594------FMOSK
28 mm	CA	MBS	5 µm	Male Luer Lock	Brown	No	500	17594----------Q

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Ø in mm | EFA[1]	Membrane	Housing	Pore Size	Connector Outlet	Color | Printing	Sterile*	Qty./Pkg.	Order No.
Minisart® NML Plus (Glass Fiber 0.7 µm[2]) + (SF)CA								
28 mm	GF+SFCA	MBS	0.2 µm	Male Luer Lock	Blue	Yes	50	17823----------K
28 mm	GF+SFCA	MBS	0.2 µm	Male Luer Lock	Blue	No	500	17823----------Q
28 mm	GF+SFCA	MBS	0.45 µm	Male Luer Lock	Yellow	Yes	50	17829----------K
28 mm	GF+SFCA	MBS	0.45 µm	Male Luer Lock	Yellow	No	500	17829----------Q
28 mm	GF+CA	MBS	1.2 µm	Male Luer Lock	Red	No	500	17825----------Q
28 mm	GF	MBS	0.7 µm[2]	Male Luer Lock	White	No	50	17824----------K
28 mm	GF	MBS	0.7 µm[2]	Male Luer Lock	White	No	500	17824----------Q
Minisart® HY (hydrophobic PTFE)								
26 mm	PTFE	MBS	0.2 µm	Male Luer Lock	Clear	Yes	50	S6596------FMOSK
26 mm	PTFE	MBS	1 µm	Male Luer Lock	Clear	No	50	1659A--------HYQ
26 mm	PTFE	MBS	0.2 µm	Male Luer Lock	Clear	No	500	S6596------FM--Q
Minisart® High Flow (PES – Polyethersulfone)								
28 mm	PES	MBS	0.1 µm	Male Luer Lock	Dark Red	Yes	50	16553----------K
Minisart® Air (Hydrophobic PTFE)								
15 mm	PTFE	MBS	0.2 µm	Male Luer Slip	Yellow	No	500	1751A----------Q
15 mm	PTFE	MBS	0.2 µm	Male Luer Slip + Needle	Yellow	Yes#	50	16596--------HNK
Minisart® Acticosart with Dome Reservoir + Hydrophobic PTFE								
26 mm	Active carbon	MBS	0.45 µm	Male Luer Slip	Blue	No	500	17840----------Q

* Sterilized Minisart® units are individually packaged. If not stated otherwise, Minisart® are sterilized by ethylene oxide.
#-mark indicates sterilization by gamma irradiation.
Non-presterilized Minisart® units: High Flow, NML, NML Plus and HY can be sterilized by ethylene oxide; High Flow, NML and NML Plus can also be sterilized by gamma irradiation

[1] Diameter of EFA – Effective Filtration Area

[2] 0.7 µm = GF particle retention ≠ pore size!

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DOMINIQUE DUTSCHER SAS

Chemical Compatibility

	Material								Minisart® Types									
	PES membrane	SFCA membrane	PTFE membrane	RC membrane	Nylon membrane	GF depth filter	Housing MBS	Housing PP	Minisart® HighFlow	Minisart® NML Ophthalsart	Minisart® NML Plus	Minisart® NML GF	Minisart® HY Minisart® Air	Minisart® RC	Minisart® NY	Minisart® NY Plus	Minisart® SRP	Minisart® PES
Filter Membrane	PES	(SF)CA	PTFE	RC	PA				PES	(SF)CA	(SF)CA		PTFE	RC	PA	PA	PTFE	PES
Pre-Filter						GF			-	-	GF	GF	-	-	-	GF	-	-
Housing Material							MBS	PP	MBS	MBS	MBS	MBS	MBS	PP	PP	PP	PP	PP
Sterilization																		
Ethylene oxide	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++
Gamma irradiation	++	++	-[1]	++	-	++	++	-	++	++	++	++	-[1]	-	-	-	-	-
Autoclaving 121 °C, 30 min	++	++	++	++	++	++	-	++	-	-	-	-	-	++	++	++	++	++
Solvents																		
Acetone	-	-	++	++	++	++	-	++	-	-	-	-	-	++	++	++	++	-
Acetonitrile	-	-	++	++	++	++	-	++	-	-	-	-	-	++	++	++	++	-
Benzene	+	+	-	++	++	++	-	++	-	-	-	-	-	++	++	++	-	+
Benzyl alcohol	+	+	++	++	++	++	-	+	-	-	-	-	-	++	++	++	++	+
n-Butyl acetate	-	-	++	++	++	++	-	++	-	-	-	-	-	++	++	++	++	-
n-Butanol	++	++	++	++	++	++	+	++	+	+	+	+	+	++	++	++	++	++
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	-	-	-	++	++	++	-	+	-	-	-	-	-	+	+	+	-	-
Petroleum ether	+	++	-	++	++	++	+	++	+	+	+	+	-	++	++	++	-	+

DOMINIQUE DUTSCHER SAS

	Material								Minisart® Types									
	PES membrane	SFCA membrane	PTFE membrane	RC membrane	Nylon membrane	GF depth filter	Housing MBS	Housing PP	Minisart® HighFlow	Minisart® NML Ophthalsart	Minisart® NML Plus	Minisart® NML GF	Minisart® HY Minisart® Air	Minisart® RC	Minisart® NY	Minisart® NY Plus	Minisart® SRP	Minisart® PES
Filter Membrane	PES	(SF)CA	PTFE	RC	PA				PES	(SF)CA	(SF)CA		PTFE	RC	PA	PA	PTFE	PES
Prefilter						GF			-	-	GF	GF	-	-	-	GF	-	-
Housing Material							MBS	PP	MBS	MBS	MBS	MBS	MBS	PP	PP	PP	PP	PP
Solvents (continued)																		
Pyridine	-	-	++	++	++	++	-	++	-	-	-	-	-	++	++	++	++	-
Tetrahydrofuran	-	-	-	++	++	++	-	++	-	-	-	-	-	++	++	++	-	-
Toluene	-	+	-	++	++	++	-	+	-	-	-	-	-	+	+	+	-	-
Trichloroethylene	-	+	++	++	++	++	-	+	-	-	-	-	-	+	+	+	+	-
Xylene	-	+	-	++	++	++	-	+	-	-	-	-	-	+	+	+	-	-
Acids																		
Acetic acid, 25%	+	+	++	++	-	++	+	++	+	+	+	+	+	++	-	-	++	+
Acetic acid, 80%	-	-	++	+	-	++	-	+	-	-	-	-	-	+	-	-	+	-
Hydrofluoric acid, 50%	+	-	++	+	-	++	-	+	-	-	-	-	-	+	-	-	+	+
Perchloric acid, 25%	-	-	++	-	-	++	-	+	-	-	-	-	-	-	-	-	+	-
Phosphoric acid, up to 10%	+	+	++	-	-	++	+	+	+	+	+	+	+	-	-	-	+	+
Phosphoric acid, 86%	+	+	++	-	-	++	-	+	-	-	-	-	-	-	-	-	+	+
Nitric acid, 30%	+	-	++	-	-	++	+	+	+	-	-	-	+	-	-	-	+	+
Nitric acid, conc.	-	-	++	-	-	++	-	-	-	-	-	-	-	-	-	-	-	-
Hydrochloric acid, 20%	++	-	++	-	-	++	+	+	+	-	-	-	+	-	-	-	+	+
Sulfuric acid, 25%	+	-	++	+	-	++	++	++	+	-	-	-	++	+	-	-	++	+
Sulfuric acid, 98%	-	-	++	-	-	++	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroacetic acid, 25%	-	-	++	++	-	++	-	+	-	-	-	-	-	+	-	-	+	-
Bases																		
Ammonia, 1N	++	+	++	+	++	++	+	++	+	+	+	+	+	+	++	++	++	++
Ammonium hydroxide, 25%	+	+	++	+	++	+	-	+	-	-	-	-	-	+	+	+	+	+
Potassium hydroxide, 32%	++	-	++	-	+	+	-	++	-	-	-	-	-	-	+	+	++	++
Sodium hydroxide, 1N	++	-	-	+	++	+	-	++	-	-	-	-	-	+	++	+	-	++
Sodium hydroxide, 32%	++	-	-	-	+	-	-	+	-	-	-	-	-	-	+	-	-	+
Aqueous solutions																		
Formaldehyde, 30%	+	++	++	+	++	++	+	+	+	+	+	+	+	+	+	+	+	+
Sodium hypochlorite, 5%	++	-	++	-	-	++	+	+	+	-	-	-	+	-	-	-	+	+
Hydrogen peroxide, 35%	++	-	++	-	-	++	+	++	+	-	-	+	+	-	-	-	++	++
pH range																		
pH 1 to 14	-	-	++	-	-	++	-	++										
pH 1 to 13	++	-	++	-	-	++	-	++										
pH 3 to 14	+	-	++	+	++	++	-	++										
pH 3 to 12	++	-	++	++	++	++	+	++										
pH 4 to 8	++	++	++	++	++	++	++	++										

The chemical compatibility guide could be confirmed either by a literature review or by laboratory tests. Please consider that 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.

Legend

++ High compatibility
\+ Limited compatibility
\- Not compatible
[1] Gamma irradiation feasible for Minisart® Air

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