

PROCLEAR GF Filters

- liquid filters
- glass microfibre

PROCLEAR GF filters are designed for reliable and economical removal of particulate and microorganisms from pharmaceutical fluids.

The non-fibre releasing glass microfibre filter media gives excellent dirt holding capacity and high flow rates for long service life and efficient and cost-effective filter system design.

PROCLEAR GF filters have low extractable levels making them ideal for general clarification and prefiltration duties in pharmaceutical processing.

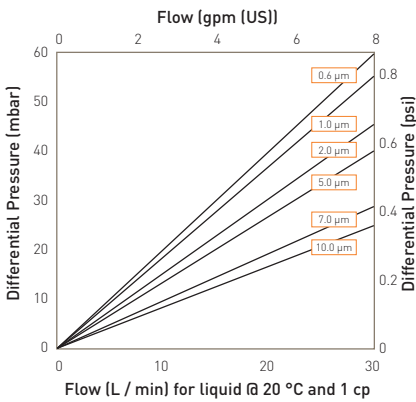
Features and Benefits

- Excellent dirt holding capacity
- Long service life for maximum throughput
- Non-fibre releasing glass microfibre media
- MURUS and DEMICAPs can be gamma-irradiated and autoclaved

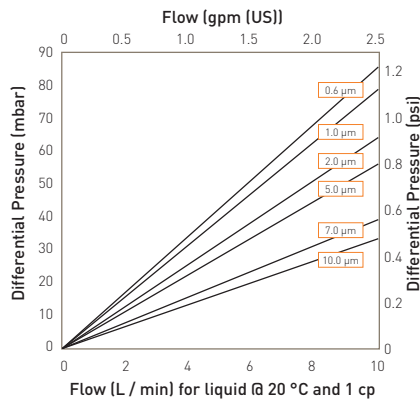


Note: PROCLEAR and DEMICAP are registered trademarks of Parker Hannifin Corporation.

Performance Characteristics



For K size for a given flow rate multiply 10" size differential pressure by 2



For A size for a given flow rate divide B size differential pressure by 2
For E size for a given flow rate multiply B size differential pressure by 2

10" size (250 mm) Cartridge

B size (65 mm) Cartridge and Capsule

Specifications

Materials of Construction

- Filtration Media: Glass Microfibre
- Upstream Support: Polypropylene
- Downstream Support: Polypropylene

Filter Cartridges

- Inner Support Core: Polypropylene
- Outer Protection Cage: Polypropylene
- End Caps: Polypropylene
- End Caps Insert: 316L Stainless Steel

*Not available in B & L endcap variants

MURUS Disposable Filter Capsules

- Core: Polypropylene
- Sleeve: Polypropylene
- End Caps Insert: 316L Stainless Steel
- Standard o-rings/gaskets: Silicone
- Capsule Body: Polypropylene
- Capsules Vent Seals: Silicone

DEMICALP Filter Capsules

- Core: Polypropylene
- Sleeve: Polypropylene
- Capsule Body: Polypropylene
- Capsules Vent Seals: Silicone
- Filling Bell: Polycarbonate

Syringe Filters

- Body: Polypropylene

Recommended Operating Conditions

Filter Cartridges

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature		Max. Forward dP	
°C	°F	(bar)	(psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.5	21.7

MURUS Disposable Filter Capsules

Up to 25 °C (77 °F) @ 5.5 barg (79.7 psig)
 Up to 60 °C (140 °F) @ 2.8 barg (40.6 psig)

Parker Hannifin certify that this product complies with the current European Council Pressure Equipment Directive (PED) - Sound Engineering Practice (SEP). This product is intended for use with Group 1 & 2 Dangerous and Harmless Liquids and Group 2 Harmless Gases at the operating conditions stated in this document. The Pressure Equipment Directive mandates that category SEP product cannot bear the CE mark.

DEMICALP Filter Capsules

Up to 40 °C (104 °F) at line pressures up to 5.0 barg (72 psig).

Effective Filtration Area (EFA)

- 10" (250 mm): 0.56 m² (6.0 ft²)
- K Size: 0.27 m² (2.9 ft²)
- A Size: 0.20 m² (2.2 ft²)
- B Size: 0.10 m² (1.1 ft²)
- E Size: 0.05 m² (0.6 ft²)
- Syringe ø50 mm: 14.50 cm² (2.25 in²)

Sterilization

	Autoclave		Steam-in-Place	
	Cycles	Temp	Cycles	Temp
Cartridges	10	130 °C (266 °F)	10	121 °C (249.8 °F)
MURUS	5	130 °C (266 °F)	-	-
DEMICALP	10	130 °C (266 °F)	-	-
Syringe	1	130 °C (266 °F)	-	-

PROCLEAR GF filter cartridges can be sanitized with hot water at up to 90 °C (194 °F) and are compatible with a wide range of chemicals.

For detailed operational procedures and advice on cleaning and sterilization, please contact the Technical Support Group through your usual Parker domnick hunter contact.

Biological Safety

Materials conform to the relevant requirements of 21CFR Part 177 and current USP Plastics Class VI - 121 °C and ISO10993 equivalents.

Quality Standards

Pharmaceutical grade products are manufactured in accordance with cGMP, 100% flushed with pharmaceutical grade purified water.

Gamma-Irradiation

PROCLEAR GF MURUS & DEMICALP disposable filters can be gamma-irradiated up to a maximum dosage of 40 kGy.

Performance Characteristics

TOC / Conductivity

The filtrate quality from a 10" (250 mm) PROCLEAR GF conforms to the requirements of current USP <643> (TOC) and USP <645> (conductivity) within the first 200 ml flush of purified water.

Oxidizable Substances

PROCLEAR GF filter cartridges meet current USP and EP quality standards for sterile purified water for oxidizable substances following a <1 litre water flush.

Endotoxins

Aqueous extracts from the 10" (250 mm) PROCLEAR GF contain < 0.25 EU / ml when tested in accordance with the Limulus Amoebocyte Lysate test.

Non-Volatile Extractables (NVE)

Total NVEs extracted in the first 5 litre flush of purified water for a 10" (250 mm) cartridge are <10 mg.

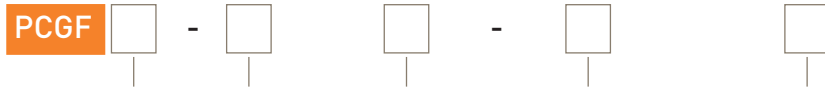
Total NVEs extracted in the first 5 litre flush of purified water for an A size 7.9" (200 mm) DEMICAP capsule are <5 mg.

Pharmaceutical Validation

A full validation guide is available upon request from Laboratory Services Group (LSG).

Ordering Information

Cartridges



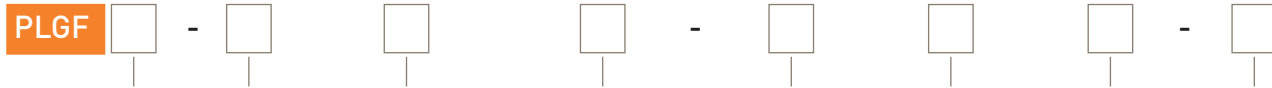
Code Length (Nominal)	Code Micron	Code Endcap [10"]	Code Variant	Code O-rings
B* 2.5" (65 mm)	96 0.6 µm	B* dh DOE	P Pharmaceutical	E EPDM
A* 5" (125 mm)	01 1.0 µm	C BF / 226 Bayonet		P PTFE Encapsulated Silicone
K 5" (125 mm)	02 2.0 µm	D Fin / 222		S Silicone
1 10" (250 mm)	05 5.0 µm	E Flat Top / 222		V Viton
2 20" (500 mm)	07 7.0 µm	G Recess / 222		
3 30" (750 mm)	10 10.0 µm	H UF Retrofit		
4 40" (1000 mm)		J SOE (no o-ring)		
		L* dh DOE		
		N Internal 213		
		R BF / 222 Bayonet		
		Code Endcap (Demil)		
		T TRUESEAL		
		Y Demi Stub		
		Z Demi A & B Std		

* Supplied in packs of 3.

Ratings based on efficiencies of > or = 99.98% using internal test procedure SOP018 based on ASTM F795-88 1993

* EPDM gaskets supplied as standard

MURUS Capsules



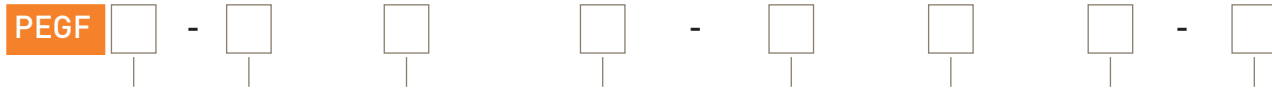
Code Length (Nominal)	Code Micron	Code Inlet Connection	Code Outlet Connection	Code Variant	Code Grade	Code Design	Code O-rings
K 5" (125 mm)	96 0.6 µm	A 3/4" Tri-Clamp	A 3/4" Tri-Clamp	P Pharmaceutical	N Non-sterile	L In-Line	E EPDM
1 10" (250 mm)	01 1.0 µm	B 1 1/2" Tri-Clamp	B 1 1/2" Tri-Clamp		S Pre-sterilised	T* T-Port	P PTFE Encapsulated Silicone
2 20" (500 mm)	02 2.0 µm	D 1" Hosebarb	D 1" Hosebarb		γ (>25 kGy)		S Silicone
3 30" (750 mm)	05 5.0 µm	T 1" Tri-Clamp	T 1" Tri-Clamp				S* Silicone
	07 7.0 µm						V Viton
	10 10.0 µm						

* Only available with a 1" Tri-Clamp

Ratings based on efficiencies of > or = 99.98% using internal test procedure SOP018 based on ASTM F795-88 1993

* Silicone o-ring supplied as standard without having to specify the 'S' code.

DEMICAP Capsules



Code Length (Nominal)	Code Micron	Code Inlet Connection	Code Outlet Connection	Code Variant	Code Grade	Code Pack N°	Code Accessory
E 4.4" (113 mm)	96 0.6 µm	T 1" Tri-Clamp	T 1" Tri-Clamp	P Pharmaceutical	N Non-sterile	3 Pack of 3	FB Filling Bell
B 5.5" (140 mm)	01 1.0 µm	N 1/2" NPT Male	N 1/2" NPT Male		S Pre-sterilised		G & H connections only
A 7.9" (200 mm)	02 2.0 µm	H 1/2" Hosebarb	H 1/2" Hosebarb		γ (>25 kGy)		
	05 5.0 µm	G Stepped Hosebarb	G Stepped Hosebarb				
	07 7.0 µm	M 1/4" NPT Male	M 1/4" NPT Male				
	10 10.0 µm	Q Walther QC	Q Walther QC				
		R Grommel / QC	R Grommel / QC				
		V 3/8" NPT Female	V 3/8" NPT Female				

Ratings based on efficiencies of > or = 99.98% using internal test procedure SOP018 based on ASTM F795-88 1993

Syringe Filters



Code Diameter	Code Micron	Code Inlet Connection	Code Outlet Connection	Code Variant	Code Grade	Code Options	Code Pack N°
050 50 mm	96 0.6 µm	F Female Luer Lock	F Female Luer Lock	P Pharmaceutical	N Non-sterile	S Standard	025 25 per box
	01 1.0 µm	G Stepped Hosebarb	G Stepped Hosebarb				
	02 2.0 µm						
	05 5.0 µm						
	07 7.0 µm						
	10 10.0 µm						

Ratings based on efficiencies of > or = 99.98% using internal test procedure SOP018 based on ASTM F795-88 1993

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