



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.

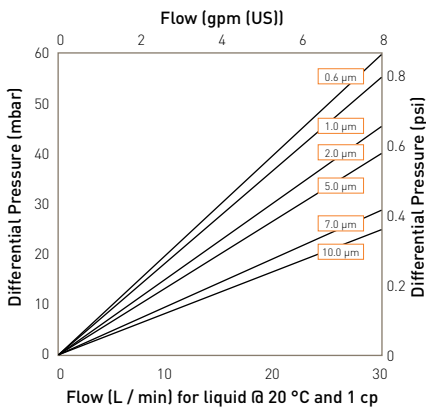
Features and Benefits

- 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

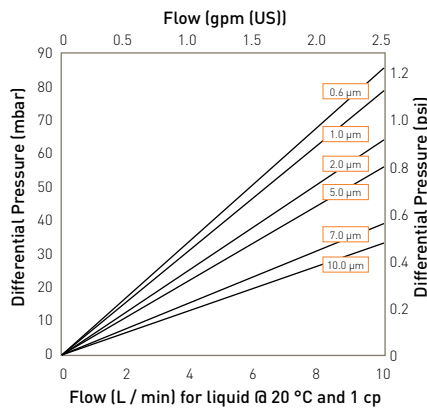


Note: PROCLEAR and DEMICAP are registered trademarks of Parker Hannifin Corporation.

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

DEMICAP 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 European Council Pressure Equipment Directive (PED) 97/23/EC Article 3, Paragraph 3 - 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 : In compliance with PED Article 3, Paragraph 3, SEP, this product does not bear the CE mark.

DEMICAP 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 m ² | (6.0 ft ²) |
| K Size: | 0.27 m ² | (2.9 ft ²) |
| A Size: | 0.20 m ² | (2.2 ft ²) |
| B Size: | 0.10 m ² | (1.1 ft ²) |
| E Size: | 0.05 m ² | (0.6 ft ²) |
| Syringe ø50 mm: | 14.50 cm ² | (2.25 in ²) |

Sterilization

| | Autoclave | | Steam-in-Place | |
|------------|-----------|-----------------|----------------|-------------------|
| | Cycles | Temp | Cycles | Temp |
| | | | (30 min.) | |
| Cartridges | 10 | 130 °C (266 °F) | 10 | 121 °C (249.8 °F) |
| MURUS | 5 | 130 °C (266 °F) | - | - |
| DEMICAP | 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 & DEMICAP 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



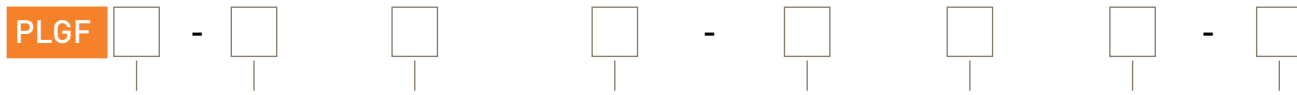
| Code Length (Nominal) | Code Micron | Code Endcap (10") | Code Variant | Code O-rings |
|-------------------------|---------------|-----------------------------|------------------|------------------------------|
| B* 2.5" (65 mm) | 96 0.6 µm | B* dh DOE | P Pharmaceutical | E EPDM |
| A* 5" (125 mm) | 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 (Demi) | | |
| | | 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



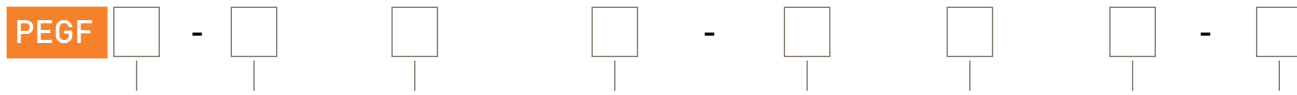
| Code Length (Nominal) | Code Micron | Code Inlet Connection | Code Outlet Connection | Code Variant | Code Grade | Code Design | Code O-rings |
|-------------------------|---------------|-------------------------|--------------------------|------------------|------------------|---------------|---------------------|
| 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 |
| 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 | | | | | | |

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** Only available with a 1" Tri-Clamp*

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

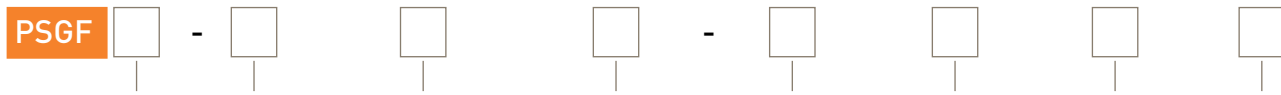
DEMICAP Capsules



| 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 | | |
| 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 | | | | <i>G & H connections only</i> |
| | 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

Parker dominick hunter has a continuous policy of product development and although the Company reserves the right to change specifications, it attempts to keep customers informed of any alterations. This publication is for general information only and customers are requested to contact our Process Filtration Sales Department for detailed information and advice on a products suitability for specific applications. All products are sold subject to the company's Standard conditions of sale.