



Microelectronics

## UltiKleen™ Excellar Filter



### Description

Pall's UltiKleen Excellar filter is constructed of the most technologically advanced non-dewetting all-fluoropolymer media that we offer to the semiconductor industry. This filter is specifically designed to handle the aqueous-based gas-generating chemicals vital for wafer cleaning (SC-1, SC-2, and SPM).

The non-dewetting property of the UltiKleen Excellar filter is achieved using our proprietary MST (Molecular Surface Tailoring) technology to tailor the surface chemistry on a molecular scale. This method is unlike conventional coating- and grafting-based methods that can compromise chemical compatibility and purity. The advantage of MST is that the PTFE membrane remains robust and durable in highly corrosive acids, bases, and organic compounds.

- Non-dewetting PTFE membrane
- Provides increased tool uptime
- All fluoropolymer construction
- Provided prewet
- PTFE compatibility maintained
- High temperature and pressure capabilities
- Very high flow rates
- Low differential pressure
- Low extractables (<30 ppb total in a 5% HCl extraction of 1.5 liters for 24 hours)
- Manufactured in a cleanroom environment
- 100% integrity tested

### Specifications

#### Materials

- Medium: PTFE
- Core, cage, and end caps: High purity PFA
- Support and drainage: PTFE
- Sealing methods: Proprietary melt seal process
- O-ring options: FEP encapsulated fluoroelastomer, Kalrez<sup>1</sup>, and Chemraz<sup>2</sup>

#### Removal Ratings

- 0.03 µm
- 0.05 µm

#### Filter Areas

- 0.03 µm
  - 254 mm / 10 in (AB): 1.2 m<sup>2</sup> / 12.6 ft<sup>2</sup>
  - 245 mm / 10 in (MR): 1.1 m<sup>2</sup> / 12.3 ft<sup>2</sup>
  - 227 mm / 10 in (G2): 2.2 m<sup>2</sup> / 22.2 ft<sup>2</sup>
- 0.05 µm
  - 254 mm / 10 in (AB): 1.0 m<sup>2</sup> / 10.7 ft<sup>2</sup>
  - 245 mm / 10 in (MR): 0.9 m<sup>2</sup> / 10.4 ft<sup>2</sup>
  - 227 mm / 10 in (G2): 2.2 m<sup>2</sup> / 20.3 ft<sup>2</sup>

#### Configurations

- Diameter:
  - AB/MR: 68 mm / 2.67 in
  - G2: 83 mm / 3.27 in
- O-ring size / end caps:
  - Code 3: 222 double O-ring / flat end
  - MR Code 25: 222 double O-ring / flat end designed to retrofit code 0 elements

#### Operating Conditions

- Maximum operating temperature: 170°C / 338°F
- Maximum forward differential pressure:
  - 0.59 MPa (85 psid) @ 50°C (120°F)
  - 0.41 MPa (59 psid) @ 51°-110°C (121°-230°F)
  - 0.25 MPa (36 psid) @ 111°-170°C (231°-335°F)
- Maximum reverse differential pressure: 0.34 MPa (50 psid) @ 20°C (68°F)

#### Integrity Test Values<sup>3</sup>

- 0.03 µm, 254 mm / 10 in (AB) segment, <30 mL/min @ 0.24 MPa (35 psig)
- 0.03 µm, 227 mm / 10 in (G2) segment, <60 mL/min @ 0.24 MPa (35 psig)
- 0.05 µm, 254 mm / 10 in (AB) segment, <24 mL/min @ 0.12 MPa (17.5 psig)
- 0.05 µm, 227 mm / 10 in (G2) segment, <39 mL/min @ 0.12 MPa (17.5 psig)

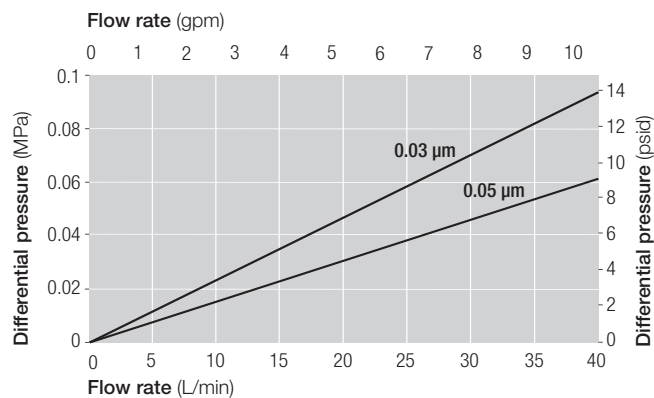
<sup>1</sup> Kalrez is a registered trademark of E. I. du Pont de Nemours and Company.

<sup>2</sup> Chemraz is a registered trademark of Green, Tweed & Co.

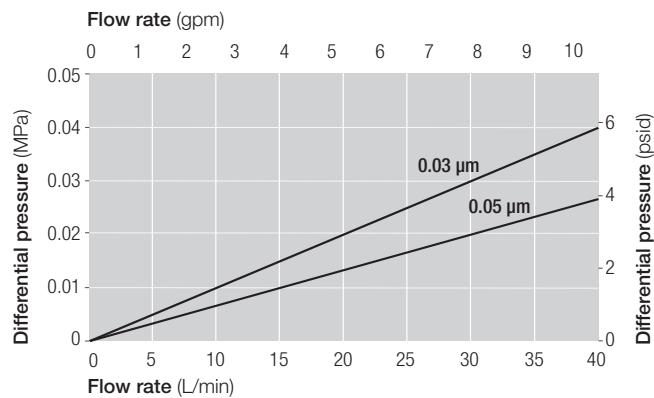
<sup>3</sup> Test fluid used is 60/40, IPA:H<sub>2</sub>O

## Differential Pressure vs. Liquid Flow Rate<sup>4</sup>

Water flow dP UltiKleen Excellar Filter



Water flow dP UltiKleen Excellar G2 Filter



<sup>4</sup> For liquids with a different viscosity from water, multiply the pressure drop by the viscosity in centipoise.

## Part Numbers / Ordering Information

Part Number <sup>5</sup>	Removal Rating (µm)	Nominal <sup>6</sup> Length (mm/in)	Configuration Code	O-Ring Material <sup>7</sup>
ABF1GPQ3EH1K3	0.03	286 / 11.2	3	FEP Encapsulated Fluoroelastomer
MRF1GPQ25EH1K3	0.03	264 / 10.4	25	FEP Encapsulated Fluoroelastomer
ABFG1GPQL3EH1K3	0.03	242 / 9.5	3	FEP Encapsulated Fluoroelastomer
ABF1GPD3EH1K3	0.05	286 / 11.2	3	FEP Encapsulated Fluoroelastomer
MRF1GPD25EH1K3	0.05	264 / 10.4	25	FEP Encapsulated Fluoroelastomer
ABFG1GPDL3EH1K3	0.05	242 / 9.5	3	FEP Encapsulated Fluoroelastomer

<sup>5</sup> The part number suffix K3 indicates that the filter is pre-wet and packaged with DI water.

<sup>6</sup> These filter configurations are also available in 508 mm / 20 in, 762 mm / 30 in and 1020 mm / 40 in lengths. These can be ordered by changing the fourth digit (or fifth digit for G2 style) in the part number to a 2, 3, or 4, respectively. Length listed is overall length, (i.e., end to end).

<sup>7</sup> Other O-ring materials are available.



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